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ARCHEOLOGICAL DATA RECOVERY OF THE CAMINO SITE (16JE223), A SPANISH COLONIAL PERIOD SITE NEAR NEW ORLEANS, LOUISIANA

Final Report

March 1996

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REPLY TO ATTENTION OF:

February 13, 1996

Planning Division
Environmental Analysis Branch

To The Reader:

The following report provides the results of phased archeological data recovery conducted at Camino, site 16JE223. The purpose of the investigations was to mitigate for adverse effects from construction of the V-Levee floodwall and Highway 45 Levee Closures project, a feature of the Westwego to Harvey Canal, Louisiana, Hurricane Protection project. This effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District, as part of our cultural resources management program.

Site 16JE223 was discovered during construction of the project. Under expedited compliance procedures, the site was considered eligible for inclusion in the National Register of Historic Places (NRHP) under 36 CFR 60.4, specifically under criteria a. and d. An action plan was coordinated with and approved by the Louisiana State Historic Preservation Officer and the Advisory Council on Historic Preservation.

The investigations demonstrated that Camino was not eligible under NRHP criterion a. The site was considered significant under criterion d.; however, the phase one investigations have exhausted the research potential of the site. The Louisiana State Historic Preservation Officer concurred with these findings in her letter dated February 21, 1995.

This report has been reviewed and accepted by the New Orleans District. We commend the outstanding efforts and careful scholarship of the authors.

James M. Wojtala
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Representative

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Chief, Planning Division

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The Camino site (16JE223) was a multi-component site located within the limits of a planned interior drainage canal to be constructed as part of the V-Levee Floodwall and Highway 45 Levee Closures, a feature of the Westwego to Harvey Canal, Louisiana Hurricane Protection Project, Jefferson Parish, Louisiana. Components revealed at the Camino site included a prehistoric shell midden; a late-eighteenth-century occupation, and an early-nineteenth-century occupation. These components were neither horizontally nor vertically discrete. The late-eighteenth-century component is presumed to be associated with the occupation of Bayou des Familles by Canary Islanders (*Isleños*), who were settled there by the Spanish colonial government in 1779. The settlement was largely abandoned over the next several years. Nonetheless, a few households of *Isleños* remained in the area as late as the first decade of the nineteenth century. The prehistoric component consisted of two small *Rangia* deposits and a scatter of aboriginal ceramics. While some of the aboriginal ceramics were collected from the shell deposits, the majority were found mixed with European material at the site. Radiocarbon dates indicate that the occupation dates ca. A.D. 1020 to 1405. Evidence for the early-nineteenth-century occupation consists of several sherds of annular and green shell-edged pearlware, a few cut nails, a key, and a shovel. Some of the earlier material from the site may also date to this later occupation. In addition to data recovery excavations at 16JE223, the entire project corridor between Levee Stations 19+00 and 26+00 was shovel tested. This area was also carefully examined for natural and cultural features that may have been related to the historic landscape in the area. With the exception of a levee/ditch complex adjacent to the remnants of the old Barataria Road, located to the east of 16JE223, no additional cultural features or deposits were identified.

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TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION 1

CHAPTER 2
THE RESEARCH DESIGN 5
Study Priorities 9

CHAPTER 3
ENVIRONMENT OF THE BARATARIA BASIN 11
Physical and Geologic Setting 11
Geomorphic Processes 11
Site Geomorphology 13
Chronology of Events 16
Climate 18
Soils 18
Plant Species 19
Natural Levees/Hardwood Bottoms 19
Forested Wetland/Cypress-Tupelo Swamps 20
Fresh Marsh 20
Brackish Marsh 20
Animal Species 20
Natural Levee/Bottomland Hardwood Forest 20
Swamp 21
Fresh Marsh 21
Brackish Marsh 22

CHAPTER 4
ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA 23
Introduction 23
The Poverty Point Period 23
The Tchula Period 26
The Marksville Period 27
The Baytown Period 33
The Coles Creek Period 39
The Mississippi Period 44
Aboriginal Populations and European Contact 49
Summary 55

CHAPTER 5
HISTORY OF THE BARATARIA BASIN AND THE STUDY AREA 57
French Settlement 57
Barataria in the Early American and Antebellum Periods 60
The Post-Civil War Period and Late Nineteenth Century 64
The Twentieth Century 65
The Origin of Landscape Features Adjacent to 16JE223 66

Table of Contents, Continued.

CHAPTER 6
THE *POBLACIÓN DE BARATARIA* 69
The Context of the Canario Emigration to Louisiana 69
The Recruitment for the Battalions of Louisiana, 1775-1778 79
Voyages to Louisiana, 1778-1779 90
Settlement in Barataria 92

CHAPTER 7
PREVIOUS INVESTIGATIONS IN THE STUDY AREA 117
Introduction 117
Beginnings of Archeology in the Barataria Basin 117

CHAPTER 8
TRANSECT SURVEY 131

CHAPTER 9
INVESTIGATIONS AT THE CAMINO SITE 145
Magnetometer Survey 145
Shovel Testing and Probing 146
Excavation Units 154
N80 E121 157
N82.5 E125 157
N82.5 E124 163
N84.5 E117.5 167
N84.5 E131 167
N84.5 E132 167
N83.8 E130 176
N85.1 E123 176
N86 E129 186
N87 E129 186
N92 E120.5 186
N94 E124.5 194
N99 E127 194
N104.5 E126.5 194
Summary 203

CHAPTER 10
ANALYSIS OF HISTORIC ARTIFACTS 205
Laboratory Methods 205
Ceramic Classification 205
Classification of Glass 211
Classification of Nails 212
Buttons 212
Pipes 212
Beads 213
Lead Shot 213
Gunflints and Lithic Debitage 213
Miscellaneous Metal Artifacts 216
Mean Ceramic Data 216

Table of Contents, Continued.

Artifact Density 221
Minimum Vessel Estimates 226
"Functional" Classification 234

CHAPTER 11
ABORIGINAL ARTIFACTS FROM THE CAMINO SITE 249
Methods of Analysis 249
Type-Variety Descriptions (Decorated Pottery) 269
Anna Incised, *var. unspecified* (N=1) 269
Buras Incised, *var. unspecified* (N=4) 269
Mazique Incised, *var. unspecified* (N=3) 269
Unclassified Curvilinear Incised (N=2) 269
Unclassified Incised (N=3) 269
Unclassified Incised and Punctated (N=6) 269
Unclassified Decorated (N=2) 270
Type-Variety Descriptions (Undecorated Pottery) 270
Addis Plain, *var. Unspecified* (N=6) 270
Baytown Plain *var. Cataouatche* (N=69) 270
Baytown Plain *var. Crown Point (N=11)* 270
Baytown Plain *var. Jean Lafitte* (N=3) 271
Baytown Plain *var. unspecified* (N=46) 271
Chronology of the Aboriginal Occupation 271
Summary 273

CHAPTER 12
ARCHEOBOTANICAL REMAINS FROM THE CAMINO SITE 277
Introduction 277
Methods of Analysis 277
Contents of the Flotation Samples 277
Wood Charcoal and Cane Stem 277
Acorn Shell 284
Maize 284
Seeds 286
Fungal Matter 286
Uncarbonized and Non-Plant Material 287
Hand-Picked Plant Remains 287
Discussion 287

CHAPTER 13
VERTEBRATE FAUNAL REMAINS FROM THE CAMINO SITE 289

CHAPTER 14
CONCLUSIONS 293
Introduction 293
The Aboriginal Component at 16JE223 293
The Early-Nineteenth-Century Component 294
The *Isleño* Component 295
Isleño Material Culture 295
Isleño Subsistence 298
Site Structure 299
The Impact of Construction on the Barataria National Register Historic District 301

Table of Contents, Continued.

REFERENCES CITED 305

APPENDIX I: SCOPE OF SERVICES 331

APPENDIX II: LIST OF PROVENIENCES AT 16JE223 339

LIST OF FIGURES

Figure 1. Excerpt from the 1992 Bertrandville, LA USGS 7.5' series topographic quadrangle showing the project area 2

Figure 2. Geologic map of south Louisiana showing location of Camino Site in relation to the Barataria Basin and the Bayou Des Familles distributary ridge. (From Geologic Map of Louisiana, 1984) 12

Figure 3. Stages of development for delta lobes. From Frazier (1967)..... 14

Figure 4. Delta complex chronology based on age of deltaic plain peats. Modified from Frazier (1967)..... 17

Figure 5. Neo-Indian culture chronology of the coastal zone..... 24

Figure 6. Carlos Trudeau's (1803) *Plan del Local de las Tierras que Rodean la Ciudad de Nueva Orleans* (Courtesy of The Historic New Orleans Collection)..... 53

Figure 7. Map by M.H. Warner and R.P. Baker dated 1842, showing land ownership in the upper Barataria basin (from Kelley and Bryant 1986:19) The approximate location of 16JE223 is indicated by arrow. No scale available 63

Figure 8. Excerpt from the Bertrandville, LA 7.5' quadrangle map (1966, photorevised 1972 and 1979) showing the Old Barataria Road. The location of 16JE233 is indicated..... 68

Figure 9. *Carta Reducia De Las Islas De Canaria*, by Don Tomas Lopez, Madrid, 1780 (from Padrón 1988)..... 71

Figure 10. Division by sex of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:151) 86

Figure 11. Age distribution of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:153) 87

Figure 12. Family affiliation of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:154) 88

Figure 13. Professions of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:156) 89

Figure 14 Excerpt from *Plano De las Concessiones Desde la Ciudad de Nueva Orleans, Hasta Bayu Sn. Juan, la Metairy, Chapitoulas and Barataria*, redrawn. No date; circa 1779, Archivo General de Indias, Papeles de Cuba, Legajo 2359. No scale available 108

Figure 15. Site Map of 16JE223 by Hahn and Swanson 125

Figure 16. Camino Site Map 133

Figure 17. Profiles of the levee and adjacent ditch..... 135

List of Figures, Continued.

Figure 18 North Profile, N100 Trench Bisecting Levee 137

Figure 19. North Profile, N100 Trench Bisecting Possible Locations of Old Barataria Road 139

Figure 20. Magnetometer Map of 16JE223 149

Figure 21. Extent of shell midden within Locus A, as determined by probing 155

Figure 22. North Profile, EU N80 E121 159

Figure 23. East Profile, EU N82.5 E125 161

Figure 24. Planview and profile of Feature 2, EU N82.5 E125, Level B2 162

Figure 25. West Profile, EU N82.5 E124 164

Figure 26. Planview and profile of Feature 5, EU N82.5 E124, Level C3 166

Figure 27. West Profile, FU N84.5 E117.5 169

Figure 28. Planview of EU N84.5 E117.5 170

Figure 29. Planview of Feature 1, EU N84.5 E131, Level B3 172

Figure 30. Planview of Feature 1, EU N84.5 E131, Level B4 173

Figure 31. South profile, EU N84.5 E131-132 174

Figure 32. Planview of Feature 1, EU N84.5 E132, Level B3 177

Figure 33. East profile, EU N84.5 E132 178

Figure 34. Profiles of depressions within Feature 1, EU N84.5 E131-132 (This is an imaginary cross-section plane that bisects each depression. For planview, see Figure 35) 179

Figure 35. Planview of Feature 1, EU N83.8 E130, N84.5 E131-132, after excavation .. 181

Figure 36. North and west profiles, EU N83.8 E130 184

Figure 37. West profile, EU N85.1 E123 187

Figure 38. South profile, EU N86 E129 189

Figure 39. Planview of EU N86 E129, Level B2 190

Figure 40. East profile, EU N87 E129 192

Figure 41. Planview of FU N92 E120.5, Level D1 195

Figure 42. West profile, EU N92 E120.5 196

Figure 43. Planview of EU N94 E124.5, Level B1 198

List of Figures, Continued.

Figure 44. South profile, EU N94 E124.5 199

Figure 45. North profile, EU N99 E127 200

Figure 46. West profile, EU N104.5 E126.5 202

Figure 47. Bar graph showing shot diameter frequencies 214

Figure 48. Unifacially worked chert flake from 16JE223 (Scale 1:1). N84.5 E132, Feature 1/Level B4 215

Figure 49. Selected rims and decorated sherds from 16JE223 (Scale 1:1) 267

Figure 50. Decorated sherds from 16JE223 (Scale 1:1) 268

Figure 51. Calibrated radiocarbon dates for the Camino site (16JE223) and Bayou Des Familles (16JE218) site. The Camino site dates are designated by asterisks. Horizontal lines mark the calibrated radiocarbon intercept(s); thin vertical bars mark the 2 σ age ranges while wide vertical bars indicate 1 σ age ranges. 275

LIST OF TABLES

Table 1. Site Names and Numbers Discussed Within This Report 25

Table 2. Radiocarbon Dates from the Coquilles Site, 16JE37 29

Table 3. Accounts of the Customs of LA Gomera, 1775 (Rodriguez 1982:246). 75

Table 4. Enumeration of Recruits and Their Families up to June 5, 1779 (Martinez 1982:152) 85

Table 5. The Isleño Settlers of . ataria 93

Table 6. Foodstuffs Acquired by the Commission for the *Sagrado Corazón de Jesús* (quoted in Martinez 1982:150-151) 102

Table 7. Material Collected from Transect and Judgementally Placed Shovel Tests 143

Table 8. Artifacts from Shovel Tests and Surface Collections, Camino Site 147

Table 9. Artifacts from LAS Shovel Tests and Surface Collections, Camino Site 151

Table 10. Artifacts from N80 E121 158

Table 11. Artifacts from N82.5 E125 160

Table 12. Artifacts from N82.5 E124 165

Table 13. Artifacts from N84.5 E117.5 168

Table 14. Artifacts from N84.5 E131 171

Table 15. Artifacts from N84.5 E132 175

Table 16. Artifacts from N83.8 E130 180

Table 17. Artifacts from N85.1 E123 185

Table 18. Artifacts from N86 E129 188

Table 19. Artifacts from N87 E129 191

Table 20. Artifacts from N92 E120.5 193

Table 21. Artifacts from N94 E124.5 197

Table 22. Artifacts from N99 E127 201

Table 23. Mean Ceramic Dates for Strata A and B and for the Site as a Whole 218

Preceding Page Blank

Table 24. Mean Ceramic Dates for Individual Units, 16JE223 219

Table 25. Mean Ceramic Dates for Canary Islander Sites 220

Table 26. Comparison of Amounts of Artifacts Per Excavated Square Meter of Soil 222

Table 27. Minimum Number of Vessels, Camino Site 227

Table 28. Minimum Number of Vessels, 16JE197 228

Table 29. Minimum Number of Vessels, 16JE198 229

Table 30. Minimum Number of Vessels, 16JE214 230

Table 31. Minimum Number of Vessels, 16JE215 231

Table 32. Minimum Number of Vessels, 16JE216 232

Table 33. Comparison of Ratios of Vessel Form and Vessel Type to Total Number of Vessels 233

Table 34. Ceramic Vessel Forms for Six Canarian Sites 235

Table 35. Comparison of Functional Class Frequencies for Six Canarian Sites 238

Table 36. Comparison of Functional Class Frequencies and Relative Frequencies for Six Camino Sites, Excluding the Housing Category 241

Table 37. Functional Class Frequencies for 16OR136 and 16JE131 244

Table 38. Functional Class Frequencies for 16OR136 and 16JE141, Excluding the Housing Category 246

Table 39. Summary of Aboriginal Ceramics from 16JE223 250

Table 40. Aboriginal Ceramics from Shovel Tests 251

Table 41. Aboriginal Ceramics from Surface Collections 252

Table 42. Aboriginal Ceramics Collected by Delta Chapter, Louisiana Archaeology Society 253

Table 43. Aboriginal Ceramics from N80 E121 254

Table 44. Aboriginal Ceramics from N82.5 E124 255

Table 45. Aboriginal Ceramics from N82.5 E125 256

List of Tables, Continued

Table 46. Aboriginal Ceramics from N83.8 E130 257

Table 47. Aboriginal Ceramics from N84.5 E117.5 258

Table 48. Aboriginal Ceramics from N84.5 E131 259

Table 49. Aboriginal Ceramics from N84.5 E132 260

Table 50. Aboriginal Ceramics from N85.1 E123 261

Table 51. Aboriginal Ceramics from N86 E129 262

Table 52. Aboriginal Ceramics from N87 E129 263

Table 53. Aboriginal Ceramics from N92 E120.5 264

Table 54. Aboriginal Ceramics from N94 E124.5 265

Table 55. Aboriginal Ceramics from N99 E127 266

Table 56. Radiocarbon Dates from 16JE223 and 16JE218 274

Table 57. Summary of Flotation-Recovered Archeobotanical Remains from the Camino Site 278

Table 58. Archeobotanical Remains from the Camino Site 279

Table 59. Hand-Picked Plant Remains, Camino Site 283

Table 60. Seeds from the Camino Site 285

Table 61. Faunal Material from Transect Shovel Test N75 E190 290

Table 62. Camino (16JE223): Species List (excluding Stratum D) 290

Table 63. Camino (16JE223), Stratum D: Species List 292

LIST OF PLATES

Plate 1. The Camino Site prior to clearing..... 136

Plate 2. Profiling the trench through the levee. 136

Plate 3. Excavations at the Camino Site 156

Plate 4. EU N82.5 E125 showing Feature 2..... 156

Plate 5. EU N83.8 E130 showing Feature 1 after excavation. 183

Plate 6. EU N92 E120.5 showing top of shell midden. 183

Plate 7. Coarse Earthenwares from 16JE223 206

Plate 8. Creamwares with Maker's Marks from 16JE223..... 206

Plate 9. Selected Pearlwares and Creamwares from 16JE223 207

Plate 10. Selected Decorated Pearlware from 16JE223..... 207

Plate 11. Selected Buttons from 16JE223 208

Plate 12. Selected Gunflints, Debitage, and Lead Shot from 16JE223..... 208

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Dr. Jill-Karen Yakubik served as Principal Investigator, performed analyses of historic artifacts, and was principal author and compiler of the report. Dr. Lawrence Santeford was Project Manager for investigations at 16JE223, while Mr. Kenneth Jones was Project Manager for transect survey. Mr. Todd McMakin served as Surveyor and Field Archeologist, and Mr. Allen Saltus was the Remote Sensing Specialist. In addition to helping with magnetometer survey and excavations, Ms. Shannon Dawdy assisted with the descriptions of the excavation units. Other field crew members included Catheren Jones, Ruben Saenz, Louise Fergusson, Gloria Everson, James Pritchard, and Patrick Jones. Mr. Benjamin Maygarden served as Historian. Prehistoric ceramics were analyzed by Dr. T.R. Kidder, who also provided the prehistoric overview for the report. Dr. Gayle Fritz of Washington University performed archeobotanical analyses, while Ms. Charlene Keck analyzed the faunal material under the supervision of Dr. Elizabeth Reitz of the University of Georgia. Dr. Roger T. Saucier provided the overview of geomorphology for the report. Ms. Rosalinda Méndez served as Technical Writer. Ms. Donna K. Stone served as Laboratory Supervisor, and Ruben Saenz and Louise Fergusson were Lab Techs. Ms. Catheren Jones was draftsperson, illustrator, and photographer.

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CHAPTER 1
INTRODUCTION

The Camino site (16JE223) was a multi-component site located within the limits of a planned interior drainage canal to be constructed as part of the V-Levee Floodwall and Highway 45 Levee Closures, a feature of the Westwego to Harvey Canal, Louisiana Hurricane Protection Project, Jefferson Parish, Louisiana (Figure 1). The site was recently discovered by amateur archeologists, who, prior to the initiation of the current field effort, surface collected the site and excavated 13 shovel tests at the locations of positive metal detector readings. Because avoidance of the site was not possible, mitigation was conducted by Earth Search, Inc. (ESI), pursuant to Contract DACW29-94-D-0020, providing for a two-stage process of data recovery at the site (see Scope of Services, Appendix I). Phase I consisted of a program of systematic shovel testing, magnetometer survey, and the excavation of 14 1 x 1 m test units. This effort demonstrated that the site and associated features had no further research potential. Therefore, Phase II excavations at 16JE223 were not recommended. This recommendation was accepted by both the USACE, New Orleans District, and the Louisiana SHPO.

Components revealed at the Camino site during the current investigation included a prehistoric shell midden; a late-eighteenth-century occupation, and an early-nineteenth-century occupation. These components were neither horizontally nor vertically discrete. The late-eighteenth-century component is presumed to be associated with the occupation of Bayou Des Familles by Canary Islanders (*Isleños*), who were settled there by the Spanish colonial government in 1779. It appears to be one of approximately 20 confirmed habitation sites located along the bayou (T. Hahn, personal communication to Yakubik, 1995; Swanson 1995). The settlement was largely abandoned over the next several years. Nonetheless, a few households of *Isleños* remained in the area as late as the first decade of the nineteenth century.

The prehistoric component consisted of two small *Rangia* deposits and a scatter of aboriginal ceramics. While some of the aboriginal ceramics were collected from the shell deposits, the majority were found mixed with European material at the site. Radiocarbon dates indicate that the occupation dates ca. A.D. 1020 to 1405. Evidence for the early-nineteenth-century occupation consists of several sherds of ca. 1830s annular and green shell-edged pearlware that represent a minimum of five vessels, a few cut nails, a key, and a shovel. Some of the earlier material from the site may also date to this later occupation. There was insufficient artifactual material at 16JE223 to suggest that the site was continuously occupied for 50 years, from ca. 1780 to 1830. It appears more likely that the site was briefly reoccupied during the second quarter of the nineteenth century.

In addition to excavations at 16JE223, the entire project corridor between Levee Stations 19+00 and 26+00 was shovel tested at gridded 10 m intervals. This area was also carefully examined for natural and cultural features that may have been related to the historic landscape in the area. With the exception of a levee/ditch complex adjacent to the remnants of the old Barataria Road, located to the east of 16JE223, no additional cultural features or deposits were identified.

Volunteers from the Delta Chapter of the Louisiana Archeological Society (LAS) assisted Earth Search personnel during these investigations. An orientation meeting was held for interested volunteers, and the work week was adjusted to include Saturdays and Sundays. Phase I data recovery began on January 10, 1995, and was completed on January 26, 1995.

Chapter 2 presents the research design for archeological investigations at 16JE223, while Chapter 3 provides the geomorphic and environmental overview of the site area. Chapters 4 and 5 are discussions of the prehistory and history of the project area, respectively.

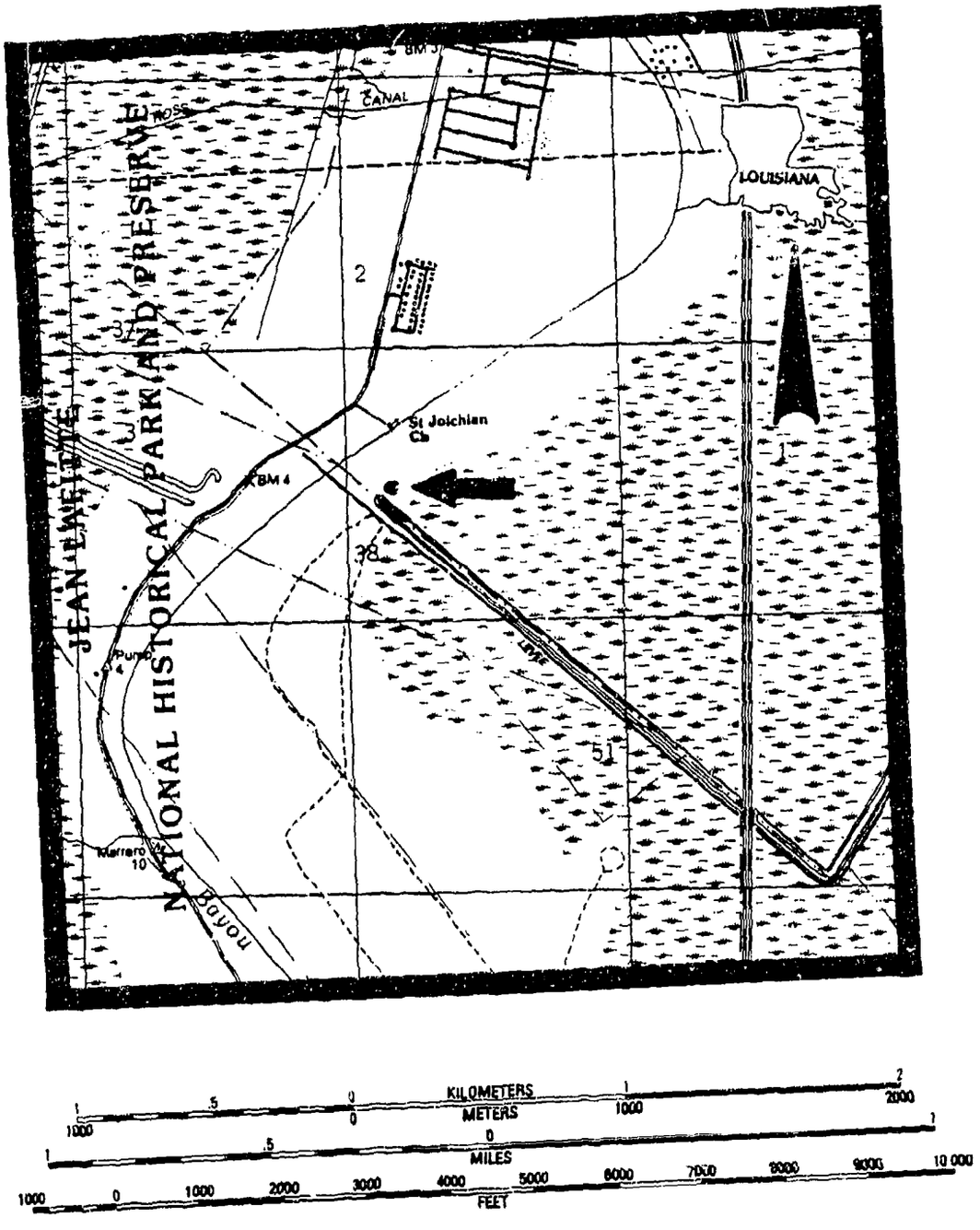

Figure 1. Excerpt from the 1992 Bertrandville, LA USGS 7.5' series topographic quadrangle showing the project area.

Chapter 6 presents a detailed discussion of the *Población de Barataria* as well as the context of the Canary Islander immigration to Louisiana. Chapter 7 is a review of previous work in the vicinity of 16JE223, including yet-unpublished investigations in the Barataria Unit of Jean Lafitte National Historical Park and Preserve co-sponsored by Jefferson Parish and the Delta Chapter of the Louisiana Archaeological Society (Dr. Charles Pearson, Principal Investigator). Chapter 8 presents the results of transect survey between Levee Stations 19+00 and 26+00, while Chapter 9 presents the results of excavations at 16JE223. Chapters 10 and 11 discuss the results of analyses of the historic and prehistoric artifacts recovered at the site, respectively. Artifacts analyzed herein include both those recovered by ESI and by the Delta Chapter of the Louisiana Archaeology Society. Chapter 12 provides an evaluation of the research design and a discussion of the significance of 16JE223, both as a site and in relation to the National Register District for the Barataria Unit of Jean Lafitte National Historical Park and Preserve.

CHAPTER 2
THE RESEARCH DESIGN

As noted in Chapter 1, the principal component at the Camino site was a late-eighteenth-century habitation that is presumed to be related to Canary Islander (*Isleño*) settlement along Bayou Des Familles. Other components present at the site included an aboriginal occupation dating ca. A.D. 1020 to 1405 and a minor early-nineteenth-century component.

When the site was initially identified, its significance in terms of National Register criteria was its potential to yield information concerning *Isleño* material culture, diet, and site organization. Seventy-three *Isleño* families were settled along Bayou Des Familles in 1779. The settlement was short-lived; only 40 individuals remained in 1788. Approximately 20 *Isleño* sites have been identified to date within the Barataria Unit of Jean Lafitte National Historical Park and Preserve (Thurston Hahn, personal communication to Yakubik, 1995; Swanson 1995). National Register of Historic Places (NRHP) test excavations were conducted at six of these sites (16JE197, 16JE198, 16JE199, 16JE214, 16JE215, and 16JE216) in 1988 (Yakubik 1989). In addition, limited investigations conducted at an additional nine *Isleños* sites have been reported by Fuller (1991). Finally, the results of investigations at these and other sites during a project co-sponsored by Jefferson Parish and the Delta Chapter of the Louisiana Archaeological Society are currently in preparation by Dr. Charles Pearson, Thurston Hahn, and Betsy Swanson (Betsy Swanson, personal communication 1995). All three of these investigations demonstrated that *Isleño* sites have the potential to address issues concerning the settlers' adaptation within a hostile environment as well as the nature and extent of European/aboriginal trade.

The research design for data recovery as originally formulated therefore focused solely on the *Isleño* occupation at 16JE223, and it included study topics concerning *Isleño* and Native relations. However, excavations at 16JE223 demonstrated that if late-eighteenth-century aboriginal ceramics were present at the site, it is impossible to sort them from the prehistoric material. Thus, these particular study topics cannot be addressed utilizing data from the Camino site. The other research issues and study topics in the research design, presented below, are still relevant.

The prehistoric component that can be isolated at 16JE223 was very small and consisted of two separate *Rangia* deposits. Cultural material other than shell was sparse in these locales. Given the small size of the prehistoric component and the fact that most of the aboriginal ceramics were mixed with the European material, the primary research issue connected with the Native occupation of 16JE223 is its relationship to the nearby Bayou Des Familles site (16JE218). Located only 130 m to the northwest, the Bayou Des Familles site represents short-term, probably seasonal occupation during the late prehistoric period, ca. A.D. 1300-1500. The focus of the occupation appears to have been maize cultivation, either for on-site consumption or export to communities farther south. We are therefore interested in whether the prehistoric component at 16JE223 is contemporaneous with that at 16JE218. Similarly, comparison of the ceramics from the two sites may provide culture historical data.

The nineteenth-century component at 16JE223 was observable by the presence of a minimum of five pearlware (both green shell-edged and annular) vessels in the assemblage and by a few metal artifacts. Some of the earlier pearlwares, creamwares, and coarsewares may also derive from this later occupation, although for the purposes herein, we have assumed that they are associated with the late-eighteenth-century component. Due to the elusive nature of the early-nineteenth-century component and the paucity of associated artifacts, no specific research issues and study topics other than identification of the occupation were developed.

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Research Issue 1. The Material Culture of *Isleños* in the *Población de Barataria*

Study Topics:

How does the artifact assemblage from the Camino site compare to those recovered from other Isleños sites in the Población de Barataria in terms of quantity, quality, and variety? Are any artifacts present which reflect the ethnicity of the site's inhabitants? Does the material culture of the Isleños differ from that of contemporary African-American slaves and free Europeans in the vicinity of New Orleans?

Limited data are available regarding eighteenth-century European material culture in southeastern Louisiana (Yakubik 1990; Smith et al. 1983), and the assemblages recovered during NRHP test excavations at 16JE197, 16JE198, 16JE199, 16JE214, 16JE215, and 16JE216 comprise a substantial portion of the archeological material dating to this period. However, test excavations provided only a small sample of artifacts present at these sites, and interpretations of *Isleño* material culture were necessarily tentative (Yakubik 1989:117-132). Data recovery at the Camino site provides the opportunity to re-evaluate these interpretations based on a larger sample. Similarly, recovery of a larger artifact sample from an *Isleño* site increases the likelihood of identifying artifacts indicative of the ethnicity of the site's inhabitants.

Documentary evidence indicates that the Spanish Colonial government provided the *Isleños* with goods and rations at the time of their settlement and at subsequent intervals (Chapter 6). Thus, while the categories of material goods supplied to the settlers may have been similar to those found on contemporary European- and African-American sites, the quality and the quantity of those goods may have differed. Although there have been few excavations at sites in the region that date exclusively to the late-eighteenth-century, eighteenth-century components can be isolated at a number of habitation sites. These include the slave quarters of Orange Grove Plantation (16JE141), the Hermann-Grima House (16OR45), and the Durel Cottage (16OR62). These provide European- and African-American assemblages which can be compared to the *Isleño* collection from the Camino site.

The material assemblages of the *Isleños* can be characterized within the context of site-specific questions that are designed to facilitate comparison to other available data sets. These include:

a) are the *Isleño* assemblages more similar to each other in terms of the relative frequencies of artifact functional classes than they are to collections from contemporary European- and African-American occupations?

b) how do the *Isleño* ceramic collections compare to each other and to collections from contemporary European- and African-American occupations in terms of the quantity, quality, and variety of the pottery?

c) are Spanish ceramics more common on the *Isleño* sites than is the case at contemporary European- and African-American sites?

d) can *Isleño*-manufactured items be identified in the assemblage?

e) what formal variation is seen in the ceramics from the *Isleño* sites as compared to those from contemporary European- and African-American occupations?

f) do vessel forms represented on *Isleño* sites reflect foodways ethnographically documented in the Canary Islands?

Research Issue 1 addresses the themes of Exploration and Colonization, Ethnic Enclaves, and European-Indian Contact identified in Louisiana's Comprehensive Archeological Plan (Smith et al. 1983:95-97).

Research Issue 2. *Isleño* Subsistence

Study Topics:

What was the diet of the Isleños? What was the relative importance of wild and domestic resources? How does it compare to ethnographic accounts of foodways in the Canary Islands?

While a body of data has been accumulated for nineteenth-century diet in southeastern Louisiana (Dukes 1993; Reitz 1982, 1992a, 1992b; Weinand and Reitz 1992, 1994; Reitz and Ruff 1983, 1984), virtually nothing is known archeologically about foodways during the eighteenth-century. It is documented that the *Isleños* were provided with corn, poultry, and pigs (Swanson 1991:67), but it is likely that they also exploited wild resources in the area. Because faunal and paleoethnobotanical studies have not been conducted on eighteenth-century sites in the region, there are no local data with which to compare the remains from the Camino site. However, ethnographic accounts from the Canary Islands may yield insight into ethnic food preferences.

Specific questions which will be used to organize the characterization of *Isleño* diet include:

a) what animal species are represented in the *Isleño* assemblage?

b) what age are the individuals represented in the *Isleño* faunal assemblage?

c) what cuts of meat are represented in the *Isleño* assemblage?

d) what butchering techniques can be observed on the faunal material in the *Isleño* assemblage?

e) what evidence of food preparation (e.g. roasting) can be observed in the faunal material in the *Isleño* assemblage.

g) what floral evidence is preserved in *Isleño* contexts?

Research Issue 2 addresses the themes of Exploration and Colonization and Ethnic Enclaves identified in Louisiana's Comprehensive Archeological Plan (Smith et al. 1983:95-97).

Research Issue 3. Site Structure.

Study Topics:

1) What are the different use areas of the Camino site? Can patterned distribution of artifacts be observed? Is the spatial patterning of artifacts similar to that seen at other Isleños sites? Are features indicative of former structures preserved? If so, what do these tell us about the construction of the buildings? Are features that have been documented at other Isleños sites, such as house mounds and borrow pits, present?

Test excavations at 16JE197, 16JE198, 16JE199, 16JE214, 16JE215, and 16JE216 demonstrated certain similarities among these sites. The undisturbed sites all had house mounds and one or more borrow pit which presumably were excavated for construction mate-

rial (Yakubik 1989). Examination of fourteen additional sites showed that similar features were present at most of these (Fuller 1991; T. Hahn, personal communication to Yakubik, 1995; Swanson 1995). The similarities between the sites appears to corroborate the documentary evidence that house sites were all established in a single effort at the time of the founding of the community. Nonetheless, several of the NRHP-tested sites exhibited distinctive spatial patterning of artifacts, indicating that individual families may have organized their living space differently, and/or disposed of their refuse in different, patterned fashions.

Little archeological evidence is presently available to suggest the appearance of the former standing structures within the *Población*. Only one architectural feature was found during NRHP test excavations at the six sites, and only a 1 x 2 m area of this feature was exposed. This feature suggested that the structure had a prepared mud floor which was laid over a layer of charcoal, presumably as a simple method of waterproofing. What appeared to be a footing for a sill was also noted. However, the size and orientation of the structure was not documented due to the limited nature of the excavations. Then too, structural evidence of outbuildings were not recovered at any of the sites (Yakubik 1989; T. Hahn, personal communication to Yakubik, 1995; Swanson 1995).

Specific questions which will characterize site layout and permit comparison to available data sets from other *Isleño* sites include:

a) what architectural/structural features are extant, and where are they located?

b) what functional classes of artifacts are associated with architectural/structural features?

c) how are different categories of artifacts (e.g. ceramics, glass, bone, nails) distributed across the site?

2) What was the length of time of occupation of the Camino site? Is there any evidence of site reoccupation? Is there evidence for multiple construction episodes?

As noted in the introduction, the *Población de Barataria* began to be depopulated soon after its establishment. Less than one-fifth of the original population was present nine years after the founding of the colony. Test excavations at 16JE197, 16JE198, 16JE199, 16JE214, 16JE215, and 16JE216 strongly suggested movement of the colonists within the settlement. Previously abandoned house lots situated in what were perceived as more favorable locations may have been reoccupied, and new house sites may have been established (Yakubik 1989). Intensive excavations at the Camino site may yield data to elucidate diachronic change in settlement within the *Población*.

Specific research questions which address site chronology include:

a) where are structural features located, and to when do they date?

b) how are chronologically diagnostic artifacts distributed across the site?

c) are stratigraphic breaks indicating a hiatus in occupation present?

Research Issue 3 and the two related Study Topics address the themes of Exploration and Colonization and Ethnic Enclaves identified in Louisiana's Comprehensive Archeological Plan (Smith et al. 1983:95-97).

Study Priorities

Research Issues 1 and 2 and the related Study Topics were considered of equal and highest priority. Questions related to eighteenth-century material culture and diet are especially important because so little archeological research in southeastern Louisiana has focused on sites of this period, which are rare (Smith et al. 1983:242). Research Issue 3 was more difficult to address. Because of the transitory nature of the settlement, it is highly likely that most of the buildings were impermanent, earthfast construction. Consequently, no evidence of former standing structures was found at 16JE223.

CHAPTER 3
ENVIRONMENT OF THE BARATARIA BASIN

Physical and Geologic Setting

The project area is situated in the Mississippi River deltaic plain segment of the Gulf Coastal Plain Province (Murray 1961). All near-surface deposits of the deltaic plain are of Quaternary age (<2.5 million years old), and those in the upper several tens of meters are of Holocene age (<10,000 years old). Deposits of Pleistocene age (>10,000 years old) are exposed at the surface no closer than about 50 km to the north and no shallower than about 15 m in the subsurface (Saucier and Snead 1989). All of the surficial deposits in the part of the deltaic plain comprising the study area were laid down within the last 5,000 years in a series of deltaic and deltaic-marine environments under the influence of prevailing subsidence, but a rather slow sea level rise (Saucier 1994). Deltaic plain landforms record a complex history of shifting centers of sedimentation and cycles of deltaic progradation and deterioration.

The Mississippi River deltaic plain consists of a series of broad, shallow estuarine basins that are bounded by distributary natural levee ridges (Figure 2). The project area lies near the eastern side of the Barataria Basin, one of the largest and best defined of the deltaic estuaries (Adams et al. 1976). Elevations of the bounding distributary ridges typically are less than 4 m above sea level, whereas those of the broad, flat interdistributary lowlands are less than 1 m. The Barataria Basin is bounded on the west by the prominent natural levee ridge of the Bayou Lafourche distributary and on the east by natural levees flanking the present course of the Mississippi River. The Basin measures approximately 130 km long between its apex near Donaldsonville, Louisiana, to the north and the Gulf of Mexico to the south, and it has an average width of about 40 km.

The broad expanse of the basin is intratidal, and grades, from north to south, from freshwater inland swamps dominated by cypress and tupelo through fresh marshes, brackish interdistributary marshes, brackish marshes and, finally, to saline marshes near the coast (Kolb and Van Lopik 1958). Open-water areas consist of a few well-defined, shallow lakes in the upper and central parts of the basin, such as Lakes Cataouatche and Salvador, and a mosaic of irregular, interconnected lakes and bays in the southern portion of the basin. In contrast, the relatively high ground of the distributary natural levee ridges are characterized by deciduous hardwood forests. These ridges are the only parts of the deltaic plain that are not permanently flooded and hence, in both prehistoric and historic times, have been the focus of permanent settlement, transportation, agriculture, and similar activities.

The project area lies on the Bayou Des Familles distributary ridge, one of the few that project into the basin area. This ridge trends south from the present channel of the Mississippi River at New Orleans over an airline distance of about 40 km. In a typical fashion, the natural levees progressively become lower and narrower toward the south until they eventually disappear. Bayou Des Familles occupies the northern segment of the sinuous former Mississippi River distributary channel as an underfit stream, whereas Bayou Barataria occupies the southern segment. In the project area, the natural levee ridge has a maximum elevation of only about 2 m above sea level and an average width of about 1 km.

Geomorphic Processes

To understand the relationship of the project area to the surrounding environment, it is important to appreciate the dynamic nature of the deltaic landscape and the geomorphic processes at work, both locally and regionally. For approximately the last 9,000 years, the Mississippi River has repeatedly shifted its centers of deltaic deposition as it has attempted to

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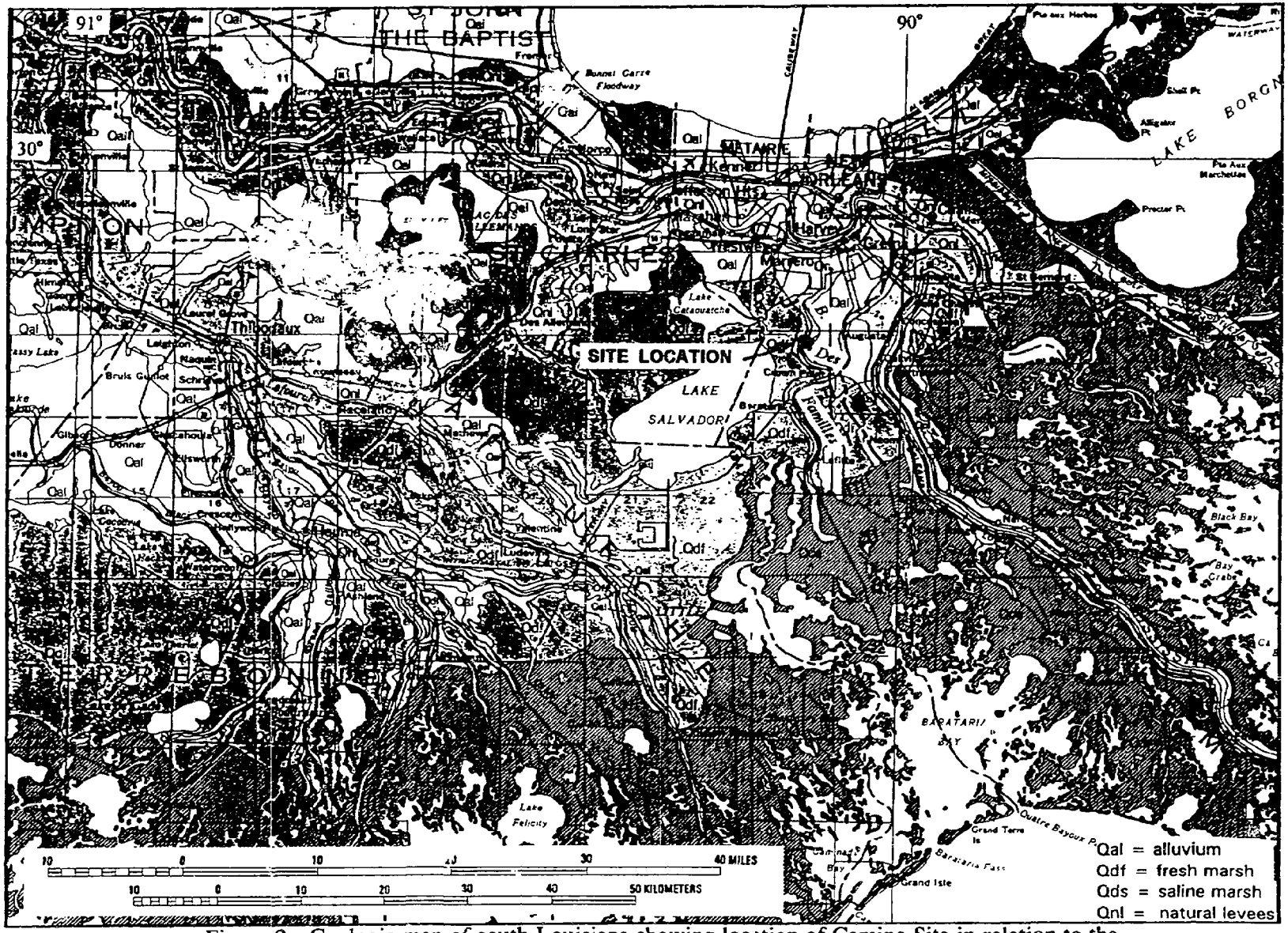


Figure 2. Geologic map of south Louisiana showing location of Camino Site in relation to the Barataria Basin and the Bayou Des Familles distributary ridge. (From Geologic Map of Louisiana, 1984)

adopt the steepest and most efficient channels to transport its load, and which provide sufficient space to accommodate deposition of its sediment load on the continental shelf. Under the influence of rising sea level and prevailing regional subsidence, depositional masses have not been static, but rather have experienced a characteristic life cycle of growth and decay (Coleman and Gagliano 1964). The deltaic plain is thus an overlapping and onlapping composite of individual deltaic deposits in various cycle stages. Each discrete mass of alluvium (usually related to a single major distributary) is called a delta lobe, and temporally related delta lobes constitute a delta complex (Frazier 1967).

The development of a delta complex has been well illustrated by a series of diagrams prepared by Frazier (1967) (Figure 3). For the purposes of this investigation, the areal distribution of surface environments in the various stages is relatively more important than the subsurface distribution of sedimentary facies. When a new river channel is adopted and sediments are introduced into shallow Gulf waters, distributaries advance seaward with relatively coarse sediments being deposited on top of relatively finer-grained ones (Figure 3A). As the process continues and more sediments are added both in shallow water and by overbank flooding, natural levees become emergent and bordering interdistributary lowlands expand largely by inorganic sedimentation. With continued natural levee growth, the interdistributary lowlands receive less river sediment and organic sedimentation becomes dominant (Figure 3B). This is the time of maximum marsh and swamp extent and minimum open water environments. As the delta complex expands, the entire fluvial system becomes inefficient, and discharge and sediment load eventually decline as the river seeks a new course to the Gulf. Distributary channels then narrow; shallow, natural levees sink into the soft underlying sediments, and interdistributary wetlands begin to deteriorate (convert more and more to open water), since sedimentation is unable to keep pace with regional subsidence and/or sea level rise (Figure 3C). In the older parts of the Mississippi deltaic plain (>5,000 years old), the subaerial parts of delta complexes were completely destroyed since sea level was rising rapidly. However, in the younger parts of the deltaic plain that formed when sea level was rising more slowly, some portions of all complexes remain in various states of preservation. Surviving distributaries were either reoccupied or influenced the routes of newer distributaries as a new deltaic cycle was initiated (Figure 3D).

To put this discussion into context, the Bayou Des Familles distributary represents a moribund distributary (Figure 3C) associated with a major lobe of the St. Bernard delta complex (Frazier 1967). The interdistributary lowlands are in an advanced state of deterioration, but because of the relative youth of the complex, the process is mainly evident only along the lower reaches of the lobe well south of the project area. Nevertheless, the natural levee ridge in the project area has experienced significant subsidence, and the channel has declined in size. The Bayou Lafourche distributary to the west of the Barataria Basin also represents an abandoned complex, but one that is quite young. Hence, the natural levees are more prominent, and the interdistributary vegetated lowlands more continuous. The present Mississippi River course to the east represents a repetition of the deltaic cycle (Figure 3D), wherein older distributaries have been reoccupied (at least in part) and natural levees are the most prominent in the deltaic plain.

Site Geomorphology

Deltaic deposits and landforms are commonly classified according to the environments in which the sediments are deposited (Kolb and Van Lopik 1958). In the project area, three depositional environments are present that have a direct relationship to the human habitation, i.e. natural levee, point bar, and abandoned distributary channel.

Natural levees are composed of silts and clays that are laid down incrementally in thin lenses during periods of overbank flooding. The highest parts of natural levees occur adjacent

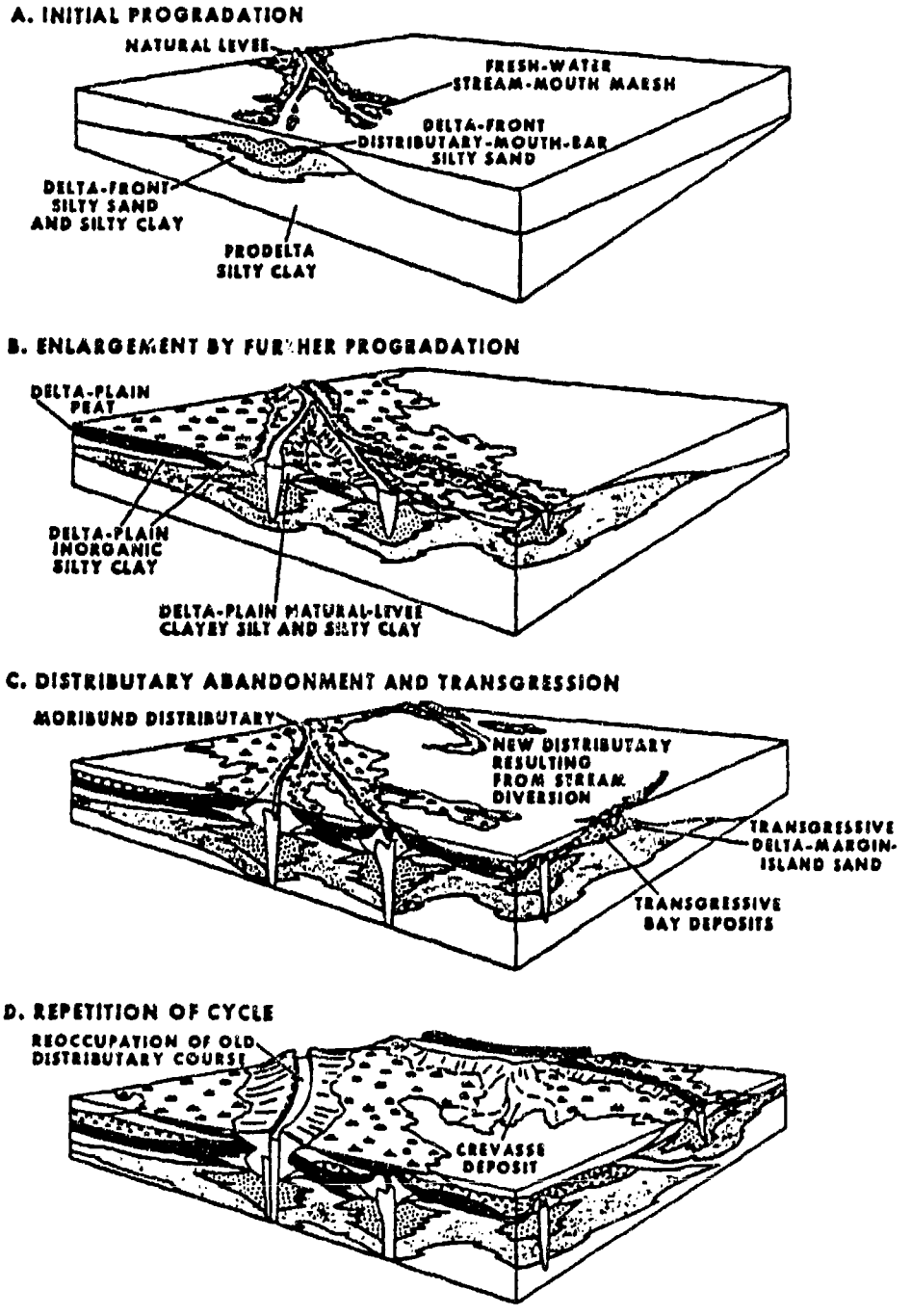


Figure 3. Stages of development for delta lobes. From Frazier (1967).

to the parent stream channels, where the relatively coarsest and largest volumes of sediment are laid down. Commerce silty clay loam soils are typically found in such settings (Matthews 1983). The deposits are subjected to periodic wetting and drying and hence are typically oxidized and desiccated with firm to stiff consistencies. They develop gray and brown mottling and iron concretions and display evidence of considerable biogenic reworking by plants and burrowing animals. In the deltaic plain setting, natural levee deposits may overlie a variety of depositional environments on the cutbank (concave) side of a stream channel but, as described below, they overlie lateral accretion deposits on the convex side of bends.

Meandering is the typical response of a stream that carries an appreciable bedload of silt and sand. The relatively coarse sediments accumulate on bars on convex banks, and there is associated bank carving on the opposite concave banks. As point bars grow through lateral accretion, narrow, linear, alternating ridges and swales become the typical surface expression. As the parent channel migrates laterally away from a given point, lateral accretion ceases and is replaced with vertical accretion, marking the beginning of a capping of natural levee deposits. Thus, in a zone of point bar accretion, the sedimentary sequence involves a meter or two of firm, oxidized, silty clay that grades downward into slightly oxidized, cross bedded silts and clays and finally into relatively clean fine sands. Generally, the natural levee veneer is thicker and better developed with increasing distance from the migrating stream channel.

When a distributary channel becomes inactive due to an upstream avulsion, discharge velocities diminish to the point where silts and sands can no longer be transported as bedload. Clays and silts are introduced into the channel only during times of high water, and much of this material is deposited in the relict channel. The process continues until the distributary channel is completely filled with soft, gray silts and clays with a high organic content. At the surface, an actively flowing stream evolves into a sluggish, slackwater slough and finally into a shallow, linear depression filled with swamp vegetation.

In the case of the Bayou Des Familles distributary, it apparently never carried more than about half of the total discharge of the Mississippi River. In addition, it was an active distributary for a relatively short period of time, and it developed in an area characterized by older, fine-grained deltaic deposits that were difficult to erode. Consequently, the distributary experienced relatively little meandering, and point bar deposits are limited in distribution. In no case did the distributary meander to the point where cutoffs took place. Geologic mapping in the project vicinity has established that at the time of maximum discharge in the system, the channel was only about 300 to 350 m wide and had a maximum depth (during flood stages) of about 30 m (Eustis Engineering Company 1992).

Another aspect of regional geomorphology is relevant to understanding the specific project setting. It is quite apparent from the surface topography and the sedimentary sequence that the Bayou Des Familles distributary was not abandoned quickly by a sudden avulsion. Rather, it is believed that Mississippi River discharge declined slowly over a period of perhaps 500 years, during which time the stream channel became progressively narrower and shallower. As this was taking place, some point bar deposits were accumulating, producing a weakly developed but discernible ridge and swale topography within what was the limits of the former channel at maximum discharge. Therefore, a "bar and swale" deposit such as is described in Swanson (1991) does occur along Bayou Des Familles in the project area, but it is not a channel fill deposit. An abandoned channel of the dimensions of the maximum-flow channel does not exist, because a rather sudden avulsion did not take place. The only true abandoned channel that exists dates to the time of the eventual effective cessation of flow (following the period of declining flow) and constitutes nothing more than a narrow strip not more than twice the width of the present bayou.

With this understanding of the geomorphology of the project vicinity, it is possible to make certain definitive statements regarding the specific relationship of the site to the physical environment. The site is situated on the crest of the natural levee of the Bayou Des Familles distributary, approximately at what was the eastern edge of the channel at the time of its maximum discharge. Point bar accretion deposits underlie the natural levee and are marked by the first (shallowest) occurrence of silt or clayey silt. Because the distributary channel was abandoned slowly and the rate of transport of bedload did not decline suddenly, the shrinking stream channel continued to migrate to the northwest and leave behind a band of point bar accretion. Therefore, the channel margin at the site is not marked by a conspicuous bankline. There is no marked lateral or vertical change in either topography or sediments -- the bankline constitutes a point in time rather than a geomorphic boundary. A careful field examination should reveal only a very slight decline in surface elevation toward Bayou Des Familles for the site, possibly also accompanied by a slight fining of the sedimentary sequence (e.g., soils of the Sharkey rather than Commerce series [Matthews 1983]). Bayou Des Familles itself represents the final position of the slowly decaying channel that occurred when the system was effectively abandoned. Effective abandonment can be defined as when significant amounts of silt and sand no longer were being transported, not necessarily when occasional flood discharge took place.

Chronology of Events

Until approximately 5,000 years ago, virtually all of southeastern Louisiana was open, shallow water of the Gulf of Mexico (Autin et al 1991). The mainland shoreline was located north of Lake Pontchartrain about 50 km north of the project area, and most of the Mississippi River deltaic plain did not exist. The active delta was located well to the west in central coastal Louisiana.

About 4,800 years ago, the Mississippi River abandoned a meander belt along the western side of its alluvial valley in favor of one along its eastern side. When this occurred, the river began to rapidly extend delta lobes past Baton Rouge into the New Orleans area, transforming shallow Gulf waters into broad expanses of intratidal marshes and swamps (Saucier 1994). According to the most definitive work to date (Frazier 1967), the first lobe of this newly developing St. Bernard delta complex was the Bayou Terre aux Boeufs lobe that trended southeast from the vicinity of New Orleans. The second lobe was the Bayou Des Familles lobe, and Frazier (1967) estimated that it started developing about 3,400 years ago and was effectively abandoned by about 2,000 years ago (Figure 4). This can be interpreted to indicate that the time of peak discharge through the distributary probably occurred between about 3,000 and 2,500 years ago. More recently, however, Levin (1991) has offered a revised chronology, in which he suggests that the period of activity of the Bayou Des Familles lobe was between about 4,600 and 3,600 years ago.

Under both scenarios, it is believed that other lobes of the St. Bernard complex formed and remained active until less than 1,000 years ago. During the entire duration of activity in the St. Bernard complex, the Mississippi River was also forming the Lafourche complex to the west, although Bayou Lafourche itself did not form until perhaps as recently as 400 to 500 years ago. To the east, the Mississippi River channel below New Orleans and its associated lobe is believed to have begun forming about 1,000 years ago.

After the abandonment of the Bayou Des Familles lobe 2,500 to 2,000 years ago (depending on interpretation), the distal parts of the lobe well south of the project area began to deteriorate, with marshland giving way to shallow water environments. However, the process never advanced very far due, first, to progradation of Lafourche complex lobes, and second, to progradation of the Plaquemines lobe. These continued to provide the interdistributary wetlands with a significant supply of sediment.

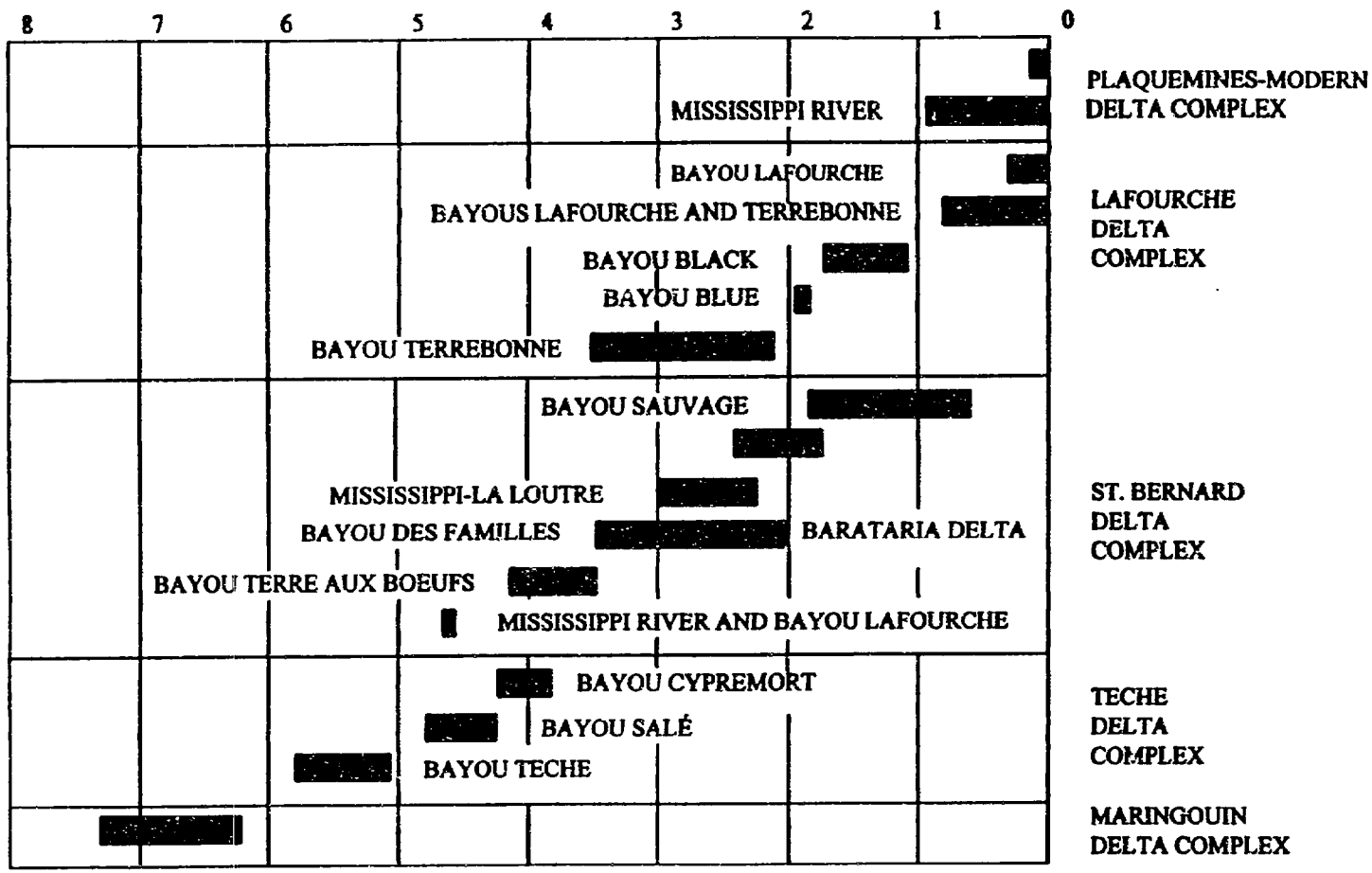


Figure 4. Delta complex chronology based on age of deltaic plain peats. Modified from Frazier (1967).

Thus, it can be stated with reasonable certainty that the physical landscape in the project area was well established by at least 2,000 years ago. Since that time, some open water in the true abandoned channel has been filled and replaced with swamp forest vegetation as a narrow band flanking the present bayou. The natural levees have subsided by perhaps as much as a meter; interdistributary marsh and inland swamp have encroached onto their flanks, and brackish water has invaded farther to the north. Because of the relationship of the distributary to the present river channel in the New Orleans area, some occasional flow has continued in the distributary during times of flooding until historic times. This would have served to perpetuate some open water, albeit a narrow slough, but was insufficient to cause significant overbank sedimentation.

It can be stated further that most of the natural levee in the immediate site area dates to at least 2,500 and possibly as much as 4,000 years ago, since this area formed closer to the time of maximum discharge than to the time of effective abandonment. During the period of declining discharge, there was probably only minor vertical growth of the natural levee ridge and very little since then. Therefore, all cultural deposits younger than Woodland are most probably surficial, and buried or deeply stratified cultural horizons are not to be expected.

Climate

Climate affects human groups directly and indirectly in terms of temperature, precipitation, seasonality, the effects on flora and fauna, and changes in soils over time (Evans 1978:3). All of Louisiana is located within an area of humid meso-thermal climate of the humid subtropical type generally characterizing all of the Southeastern United States (Trewartha 1970:12-13). The present-day climate of Jefferson Parish is marked by long, hot, and humid summers, although the coastal area is cooled by breezes from the Gulf of Mexico (Matthews 1983:2). The average temperature is 81 degrees F, with an average daily maximum of 90 degrees. Winters are generally warm, with rare snowfalls and occasional incursions of cool air from the north. The average temperature is 54 degrees F, with an average daily minimum of 44 degrees.

In most years, the growing season exceeds 260 days (White et al. 1983:103). This means that it is often possible to schedule successive plantings of a crop between the last freeze in spring and the first freeze in the fall. In addition, 56 percent of the annual precipitation of 147.5 cm falls in April through September. This is the growing season for most crops.

Soils

In their study of the Barataria Unit of Jean Lafitte National Historical Park and Preserve, White et al. (1983:103) observe that the eastern third of the park has alluvial soils of the Inceptisols type supportive of hardwood bottom vegetation, and the marsh vegetation in the western region exhibits soils of the Histosols type. Sharkey clay is the specific soil type associated with 16JE223 (Matthews 1983:Sheet 17). This soil is poorly to somewhat poorly drained and is found on natural levees of the Mississippi River and its distributaries.

Sharkey clay is of very slow permeability, having formed in clayey alluvium. Flooding is rare, but it can occur after heavy rains. Water also stands in low places for short periods after heavy rains. The soil belongs to the Vertic Haplaquepts family, of the Inceptisol order. The development of genetic horizons is just beginning in Inceptisols, but they are still considered to be older than Entisols (Smith 1973; Foth and Turk 1972:246). There is some evidence of leaching, but this is not extreme. Sharkey clay is moderately well suited to cultivated crops, although a drainage system is usually required (Matthews 1983:19).

Reaction of Sharkey clay tends to be strongly acid to moderately alkaline in the A horizon, but in the B and C horizons the soil is neutral to moderately alkaline. Matthews (1983:Table 15) gives a pH range of 5.1 to 8.4 for the soil. As in the case of Commerce silty clay loam, the conditions are potentially favorable for the preservation of organic remains in buried contexts.

Plant Species

Barataria Basin can be divided into five primary environmental units and two secondary units (Bahr and Hebrard 1976:2). The primary units are forested wetland (swamp), fresh marsh, brackish marsh, saline marsh, and offshore area. Secondary units are beaches and other elevated areas (cheniers, natural levees, and spoil banks). White et al. (1983:103) identify the five general types of communities as hardwood bottom, intermediate swamp, cypress-tupelo swamp, marsh, and man-altered. The four environmental units described below are natural levee/hardwood bottoms, forested wetlands (swamps), fresh marsh, and brackish marsh. Natural levees/hardwood bottoms receive primary focus, since this is the environment of 16JE223. Attention is necessarily given to forested wetlands/cypress-tupelo swamps and fresh marshes because these units are immediately adjacent to the natural levee/hardwood bottom unit, and the plant and animal species differ somewhat depending on unique characteristics of the units. Brackish marshes are also described because these are the source of *Rangia cuneata*, a mollusk very important in the precontact Native American diet of the region.

The plant species found in the four environmental units are identified below. The animal species are described in the next section. There is a direct relationship between the types of vegetation and animal species present, since most animals depend on specific plants for food or, as carnivores, will seek out these plant-eating animals.

Natural Levees/Hardwood Bottoms. The natural levees are extremely important as "ecological reservoirs of species diversity" (Bahr and Hebrard 1976:62). The majority of plant species are not suited for human consumption, but they provide a diversity of habitats for terrestrial animals. Matthews (1983:Table 6) states that suitable trees for Commerce silty clay loam are American sycamore, sweetgum, eastern cottonwood, Nuttall oak, water oak, green ash, and pecan. Sharkey clay is suited to almost the same tree species, although cherrybark oak replaces Nuttall oak. These trees are characteristic of hardwood bottom communities.

> The hardwood bottom forests along Bayou des Familles comprise 437 hectares (1080 acres) of the 3240 hectare core area in the Barataria Unit and are dominated by water oak (*Quercus nigra*). Subdominants within these ridge forests include sweet gum (*Liquidambar styraciflua*), hackberry (*Celtis laevigata*), and live oak (*Quercus virginiana*). From the two hardwood bottom sites sampled, the average importance value of each dominant and subdominant species mentioned above was 82, 33, 31, and 20 respectively. Such a species composition agrees with Braun's (1950) description of bottoms in the Mississippi Delta region. Also, as she states, "the southern aspect of this forest is emphasized by the abundant palmetto (*Sabal minor*)." Several other species that characterize these forests include box-elder (*Acer negundo*), honey-locust (*Gleditsia triacanthos*), American elm (*Ulmus americana*), and Nuttall oak (*Quercus nuttallii*).
>
> The most common shrub species in the hardwood bottoms are palmetto and green haw (*Crataegus virdis*). In some areas thickets of possum-haw (*Ilex decidua*) are found. Forest gaps support elderberry (*Sambucus canadensis*) and French-mulberry (*Callicarpa americana*). Occasionally the introduced camphor-tree (*Cinnamomum camphora)* is found. Vines are quite striking and common, including poison-ivy (*Rhus toxicodendron* var. *vulgaris*), Virginia

creeper (*Parthenocissus quinquefolia*), supple-jack (*Berchemia scandens*), pepper-vine (*Ampelopsis arborea*), muscadine (*Vitis rotundifolia*), and hemp-weed (*Mikania scandens*) [White et al. 1983:103-104].

Bahr and Hebrard (1976:Table 1) add cottonwood (*Populus heterophylla*), bald cypress (*Taxodium distichum*), roughleaf dogwood (*Cornus drummondii*), black willow (*Salix nigra*), shagbark hickory (*Carya ovata*), pumpkin ash (*Fraxinus tomentosa*), persimmon (*Diospyros virginiana*), deciduous holly (*Ilex decidua*), and Shumard red oak (*Quercus shumardii*).

Forested Wetland/Cypress-Tupelo Swamp. This unit is adjacent to the natural levee/hardwood bottom forest. Bahr and Hebrard (1976:13) observe the community is affected by water level and drainage, with a swamp occurring in an area where the soil is "...usually saturated or covered with water for one or more months of the growing season." True swamp forest is dominated by bald cypress (*Taxodium distichum*) and tupelo gum (*Nyssa aquatica*). Other vegetation present includes swamp maple (*Acer rubrum* var. *drummondii*), pumpkin ash (*Fraxinus tomentosa*), and woody shrubs, such as Virginia willow and buttonbush (*Cephalanthus occidentalis*). Climbing vines are very common, including poison ivy (*Rhus toxicodendron* var. *vulgaris*), evening trumpet flower (*Campsis radicans*), greenbrier or catbriar (*Smilax* spp.), *Silvo manso*, and *Ampelopsis cordata*. Spanish-moss (*Tillandsia usneoides*), mistletoe, ferns, and lichens are also represented. White et al. (1983:105) add wax-myrtle (*Myrica cerifera*), smart-weed (*Perscicaria punctata*), alligator-weed (*Alternanthera philoxeroides*), swamp-potato (*Sagittaria lancifolia*), water hyacinth (*Eichhornia crassipes*), red iris (*Iris fulva*), blue iris (*Iris giganticaerulea*), and bur-marigold (*Bidens laevis*) to the list. The water hyacinth is not native to the region.

Fresh Marsh. This zone differs from the swamp forest wetland in that it exhibits increased thickness of organic sediment. There is a lack of trees (White et al. 1983:106). Plant species include maidencane (*Panicum hemitoma*), bulltongue (*Sagittaria falcata*), spikerush (*Eleocharis* sp.), alligator-weed (*Alternanthera philoxeroides*), sedge (*Cyperus odoratus*), cat-tail (*Typha* spp.), water millet (*Echinochloa walteri*), water hyssop (*Bacopa monnieri*), smartweed (*Polygonum* sp.), three-cornered grass (*Scirpus olneyi*), and giant cutgrass (*Zizaniopsis miliacea*) (Bahr and Hebrard 1976:Table 2).

Brackish Marsh. Bahr and Hebrard (1976:Figure 1) show brackish marshes some distance south of 16JE223. The system water level and salinity in the brackish marsh are influenced by the level of Gulf waters at the coast. The major plant species present are wire grass (*Spartina patens*), salt grass (*Distichlis spicata*), oyster grass (*Spartina alterniflora*), dwarf spikerush (*Eleocharis parvula*), black rush (*Juncus romerianus*), and three-cornered grass (*Scirpus olneyi*).

Animal Species

Animal species are restricted to specific units to some extent on the basis of plant species or other factors, such as water, but there is also some movement of animals between environmental units. Thus, deer may be found at times in any of the diverse units of the Barataria Basin (swamp, fresh marsh, and bottomland hardwood forest) depending in part on seasonal availability of plant resources and varying annual conditions, such as drought.

Natural Levee/Bottomland Hardwood Forest. This unit offers the best habitat for terrestrial animals since it rarely floods. Various nut-bearing trees produce mast during the fall attractive to a variety of mammals and birds. Native mammals common in this environment include white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), squirrel (*Sciurus* sp.), rabbit (*Sylvilagus* sp.), and opossum (*Didelphis virginiana*).

The white-tailed deer is a browsing ruminant. Its diet "...consists of tender shoots, twigs, and leaves, a wide assortment of herbaceous foodstuffs, acorns of a number of oak species, and certain fruits" (Smith 1975:19). Deer are selective in their feeding habits, with the diet shifting significantly from season to season. Although deer are found in climax forest situations where a closed canopy exists, their population densities are low. The greatest number of deer are found in small areas of varying types, where maximum edge areas between habitat zones exist. In the Barataria Basin, this would be where the hardwood bottoms give way to forested wetlands, or similar edges. The mast in the bottom hardwoods unit attracts deer during the fall and winter, although the tender plants of the swamps provide at least seasonal nourishment. The range of deer usually does not greatly exceed one mile (Smith 1975:20-21). Although deer can be hunted all year, there are behavioral changes associated with the rutting season (September-November) that make male deer more curious and belligerent. At these times, they are easier to hunt. During most of the year, the hunting strategy of slow stalking and concealment potentially frightens the game.

Raccoons are nocturnal feeders, generally secluded in dens during the day (Arthur 1928:87-98; Smith 1975:43). Dens (tree cavities, fallen logs) tend to be near creeks, bayous, or rivers. Seasonal availability dictates the kinds of foods taken. Winter foods consist of carrion, winter-killed fish, corn, and mice. Spring and summer foods include mulberries, dewberries, crayfish, and insects, with corn, wild grapes, and blackberries added to the diet in late summer. Fall foods include fruits and nuts (persimmons, pecans, acorns). Raccoons cover large distances and forage in diverse habitats, but their home range tends to be about one mile in diameter.

The opossum prefers woodland regions with open water areas. They are not found in densely forested areas lacking water, and they avoid open areas (Arthur 1928; Smith 1975:86). They are strictly nocturnal, except in circumstances when they are disturbed and appear during the day. Opossums prefer to eat insects, but other foods include rabbit (feeding on carrion), pokeberry, wild grape, persimmon, and blackberry.

The cottontail rabbit is found in a wide variety of dry habitats. It is found in closed canopy forests, but population densities are greater in open brushy or forest border habitats with shrubby vegetation and small open areas (Smith 1975:92). Food preference shifts with the seasons. During the winter they live on dried herbs, grasses, fruits, and berries. During the growing season, they eat leaves, stems, flowers of grasses, herbs, and sedges. They are most active at night and during the early morning.

Swamp. Aquatic animals are the most abundant animals to be exploited in this unit, although mammals are known to inhabit or invade the swamp in their quest for food. Native mammals recorded are swamp rabbit (*Sylvilagus aquaticus*), deer, and raccoon (Bahr and Hebrard 1976:23). Otters (*Lura canadensis*) also are occasionally found. Birds include osprey, red-shouldered hawk, kingfishers, herons, and egrets (Bahr and Hebrard 1976:21, 23; Department of Conservation 1931).

Aquatic animal species are well represented, and fish species include the blue catfish (*Ictalurus furcatus*), channel catfish (*Ictalurus punctatus*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), and bowfin (*Amia calva*) (Bahr and Hebrard 1976:22-23; Department of Conservation 1933). A number of species of gar (*Lepisosteus* spp.), as well as other fish, have been collected in the unit (Bahr and Hebrard 1976:Table 10). Reptiles include alligator (*Alligator mississippiensis*), box and snapping turtles, skinks, and cottonmouth moccasins (Bahr and Hebrard 1976:21, 23).

Fresh Marsh. Mammals are poorly represented in this unit, although they occasionally seek food resources in the freshwater marshes. Native mammals observed at times in-

clude mink (*Mustella vison*) and raccoon. Deer occasionally graze in the fresh marsh (Bahr and Hebrard 1976:27, 29). Birds recorded in the marshes include marsh wrens, yellowthroats, egrets, blackbirds, bitterns, gallinules, herons, marsh hawks (Bahr and Hebrard 1976:29). The Barataria Basin is located at the terminus of the Mississippi flyway.

Animals found more readily in aquatic contexts include fish and some reptiles. In associated water bodies, a significant variety of fish have been noted. These include spotted gar (*Lepisosteus oculatus*), gulf menhaden (*Brevoortia patronus*), bay anchovy (*Anchoa mitchilli*), carp (*Cyprinus carpio*), black bullhead (*Ictalurus melas*), yellow bullhead (*Ictalurus natalis*), channel catfish (*Ictalurus punctatus*), bluegill (*Lepomis macrochirus*), spotted sunfish (*Lepomis punctatus*), largemouth bass (*Micropterus salmoides*), and numerous others (Bahr and Hebrard 1976:Table 10). The largest reptile present in this environmental unit is the American alligator (*Alligator mississippiensis*) (Bahr and Hebrard 1976:29).

Brackish Marsh. The muskrat (*Ondatra zibethicus*) is the primary herbivorus mammal consistently occupying the brackish marsh (Bahr and Hebrard 1976:37, 120). It eats primarily vegetable foods, including the root systems of plants that grow in or about water (cat-tail and *Scirpus* sp.). Rabbits and white-tailed deer are found more rarely, compared to their presence in fresh marshes. Mink (*Mustella vison*) prefer the fresh marsh, but they become more numerous in brackish marshes during periods of peak muskrat density. Raccoon and otter (*Lutra canadensis*) have also been observed in brackish marsh areas.

During spring and summer, bird species become numerous. These include king rail, boat-tailed grackle, and red-winged blackbird. Other birds present include dabbling duck (mallard, mottled duck, black duck, gadwell, pintail, green-winged teal, blue-winged teal, baldpate, and shoveler) (*Anas* sp.), diving ducks (redhead, canvasback, scaup, ringnecked, ruddy, and mersgansers) (*Aythya* sp.), egrets, herons, bitterns, ibises, osprey, and kingfishers.

Alligators seasonally range from the swamp forest to the salt marsh, but reptiles generally become less numerous as salinity increases. Fish found in the brackish marsh include spot (*Leiostomus xanthurus*), southern flounder (*Paralichtys legostigma*), croaker (*Micropogon undulatus*), sea trout or speckled trout (*Cynoscion nebulosus*), sheepshead (*Archosargus probatacephalus*), silver perch (*Bairdiella chrysura*), and black and red drum (*Pogonias cromis*).

Rangia cuneata shell is found at prehistoric sites throughout the Barataria Basin. Byrd (1976) examined the nutritional and caloric value of this brackish water mollusk in order to determine its relative importance to prehistoric diets. She found that *Rangia* was relatively low in food value when compared to other food resources available to prehistoric Native Americans. However, the clams are relatively abundant and require little energy to collect. In addition, *Rangia* may have contributed to trace element intake and other aspects of diet that remain undetermined. Also, the large volume of *Rangia* shells that result from harvests represent an important source of "fill" in low-lying areas subject to flooding. It is possible that Native Americans were deliberately using *Rangia* shells to provide greater topographic relief for their habitations.

CHAPTER 4
ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

Introduction

This chapter presents an overview of Native American culture history in southeastern Louisiana. The focus of this overview is on the period beginning at roughly 1500 B.C. and continuing up to early historic times. Few sites dated to the Paleo-Indian or Archaic Periods have been reported in southeastern Louisiana (Gagliano 1963; Gagliano and Saucier 1963). Although land formation was occurring in the study area during the Archaic period, evidence indicates that human occupation occurred subsequent to maximum development of the distributary network. Additionally, Paleo-Indian and Archaic period sites are likely to have been buried or destroyed by subsequent riverine processes.

In a recent synthesis of the archeology of the Mississippi Valley and the Trans-Mississippi South, Jeter and Williams noted that the "nature of prehistoric developments in the coastal zone during the time span between Late Marksville (Issaquena) and Plaquemine cultures is not well defined" (1989:152). This statement applies especially well to the Barataria Basin portion of the coastal zone, where despite over 50 years of archeological research, basic culture historical and chronological subdivisions remain vaguely defined and poorly understood.

The archeology of the Barataria Basin is generally well understood in the broadest perspective of Lower Mississippi Valley prehistory. Archeologists recognize a pattern of cultural development over time, and they are able to classify archeological cultures into large temporal and culture historical units (Figure 5). It is on the local level, however, that our ability to create appropriately fine-grained culture historical entities fails us. Naturally, the creation of cultures, phases, and chronological frameworks is only a beginning point for further, presumably more meaningful, analysis of Native American behavior in the coastal zone. We must recognize, though, that until we have a comprehensive means of examining changes through space and time, and relating these patterns to coeval events in adjacent areas, archeological research cannot proceed in a systematic fashion.

From the outset, it should be made clear that the research presented below is organized around the study of ceramics and their changes through time. Other aspects of material culture are either too rare to use for our purposes (i.e., lithics), or do not appear to be temporally or stylistically sensitive enough (i.e., bone tools). Changes in subsistence practices and other adaptive patterns can only be substantiated once we have arrived at a well supported culture historical framework. Sites discussed below and throughout this volume are presented in Table 1.

The Poverty Point Period

The name Poverty Point is derived from the type site, an area of massive earthwork construction in northeast Louisiana (Ford and Webb 1956; Gibson 1983; Neuman 1984). The Poverty Point Site (16WC5) is believed to have been a cultural center with trade networks and influence extending throughout the Lower Mississippi Valley (Byrd 1991; Gibson 1983). Baked clay balls known as Poverty Point objects are one of the important traits that mark the period. Other traits include elaborate lapidary and microlithic industry, use of steatite vessels, and the importation and use of exotic non-local stone (Gibson 1983; Neuman 1984; Webb 1982).

The earliest known sites in the vicinity of the study area are dated to the Poverty Point period. The Linsley (16OR40) and Garcia (16OR34) sites are located in Orleans Parish

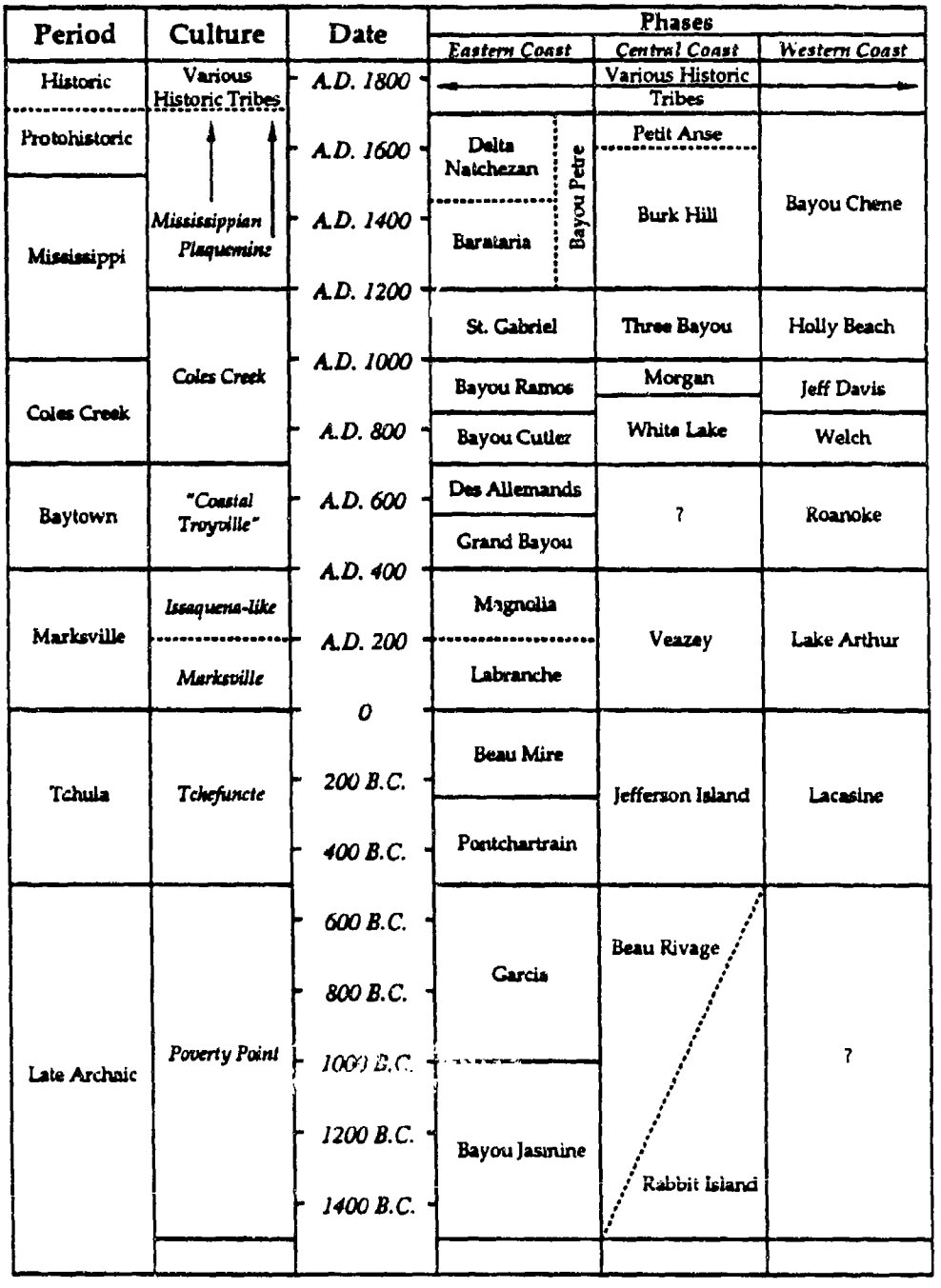


Figure 5. Neo-Indian culture chronology of the coastal zone.

Table 1. Site Names and Numbers Discussed Within This Report.

Avery Island -- 16IB23
Bayou Cutler -- 16JE3
Bayou Des Familles -- 16JE218
Bayou Des Oies -- 16JE35
Bayou Dupont -- 16JE7
Bayou Dupont-Dupre Cut -- 16JE91
Bayou Goula -- 16IV11
Bayou Jasmine -- 16SJB2
Bayou Penchant -- 16TR76
Bayou Petre -- 16SB11
Bayou Ramos I -- 16SMY133
Bayou Ronquille -- 16PL7
Bayou Trepangnier -- 16SC10
Bayou Villars -- 16JE68
Bergeron School-- 16LF33
Big Oak Island -- 16OR6
Booth -- 16LV6
Bottle Creek -- 1BA2
Boudreaux -- 16JE53
Bowie -- 16LF17
Bruly St. Martin -- 16IV6
Buras Mounds -- 16PL13
Camino -- 16JE223
Chenier Grand Coquilles -- 16JE46
Coquilles -- 16JE37
Doucette -- 16ST44
Dupree Cutoff I -- 16JE8
Dupree Cut Off II -- 16JE9
Emerson -- 16TE104
Fleming -- 16JE36
Garcia -- 16OR34
Gibson Mounds -- 16TR6
Grand Bayou -- 16SC42, 16SC43, 16SC45
Greenhouse -- 16AV2
Isle Bonne -- 16JE60
Isle de Puet -- 16JE75, 16JE76, 16JE81
Kenta Canal -- 16JE51
Kleinpeter -- 16EBR5
Labranche -- 16SC11
Lafayette Mounds -- 16SM17
Lake Penchant -- 16TR76
Linsley -- 16OR40
Little Oak Island -- 16OR7
Little Woods -- 16OR1-5
Magnolia Mounds -- 16SB49
Medora -- 16WBR1
Moccasin Mound -- 8SR85
Morgan -- 16VM9
Morton Shell Mound -- 16IB3
Mulatto Bayou -- 16SB12
Onion Lake -- 16VM17
Oyster Road -- 16JE84
Peck -- 16CT1
Poverty Point -- 16WC5
Pump Canal -- 16SC27
Richeu Field -- 16TR82
Rosethorn School -- 16JE50
Shell Beach -- 16SB39
Shipyard -- 16JE85
Sims -- 16SC2
St. Gabriel -- 16IV128
Tchefuncte -- 16ST1
Temple -- 16LF4
Thibodaux -- 16LAS35
Three-Bayou Field -- 16JE98
Whitehall -- 16LV19

unnamed -- 16CM61
unnamed -- 16JE62
unnamed -- 16JE73
unnamed -- 16JE163
unnamed -- 16JE164
unnamed -- 16JE172
unnamed -- 16JE195
unnamed -- 16JE197
unnamed -- 16JE198
unnamed -- 16JE199
unnamed -- 16JE200
unnamed -- 16JE201
unnamed -- 16JE202
unnamed -- 16JE204
unnamed -- 16JE206
unnamed -- 16JE214
unnamed -- 16JE215
unnamed -- 16JE216
unnamed -- 16JE217

(Gagliano and Saucier 1963), and the Bayou Jasmine site (16SJB2) is located at the western end of Lake Pontchartrain (Duhe 1977; Gagliano and Saucier 1963:Figure 1). The Linsley site is situated on a buried natural levee associated with an early course of the Mississippi River. Material dredged from the subsided *Rangia* shell midden was used to define the Bayou Jasmine-Garcia Phase of the Poverty Point period (Gagliano and Saucier 1963; Gagliano et al. 1975:44-47). A series of radiocarbon dates, baked clay balls, and a characteristic Poverty Point artifact assemblage are evidence that date the site to the Poverty Point period (Gagliano and Saucier 1963:Table 1; Weinstein 1978:A/23-A/25). The Garcia site was found at the eastern tip of Orleans Parish and consisted of an eroding *Rangia* beach deposit. The evidence for a Poverty Point component here is relatively scarce, consisting principally of microlithic tools and a variety of chipped and polished stonework (Gagliano and Saucier 1963:326, Table 1).

Another important site representing this period and phase is Bayou Jasmine. Here, the evidence for a Poverty Point period occupation consists principally of baked clay Poverty Point objects quite similar in size and shape to those from the Poverty Point site (Gagliano and Saucier 1963:321). Duhe (1977:35-37) also reports the presence of small numbers of Poverty Point microtools and a relatively minor quantity of non-local lithic material, including unworked quartz c tals, orthoquartzite projectile points, worked hematite, steatite (which was rare) and an un ified gray-brown chert. The Bayou Jasmine site also supported an extensive Tchefuncte component, along with later Marksville, Coles Creek, and Plaquemine occupations (Duhe 1977; Gagliano and Saucier 1963).

The Tchula Period

Tchula period occupations in the Lower Mississippi Valley are equated with the Tchefuncte culture. The period has also been identified as the Formative (Jenkins and Krause 1986), or Early Ceramic period because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley (Neuman 1984:113, 122). Sites are few and scattered, with most occupations found in the coastal zone (Neuman 1984). These data are interpreted to suggest that the peoples of the Tchefuncte culture were largely seminomadic hunters and gatherers (Neuman 1984:135). Within subareas such as South Louisiana, regional artifact markers, primarily Tchefuncte type ceramics, are useful for recognizing Tchula period occupations (Phillips 1970:7, 8, 15, 76) and possibly for defining regional populations (Shenkel 1981; Weinstein 1986).

Peoples of the Tchefuncte culture were the first to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts (Webb 1982). These may represent primarily trade goods from the earliest pottery-making cultures in the east. The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities a sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48). Ceramic decorations and various percentages of these decorations have been used to create several regional phases of the Tchefuncte culture in the study area (Weinstein 1986). The Pontchartrain phase is considered the earliest Tchefuncte manifestation in the region, and is thought to date from ca. 500 B.C. to ca. 250 B.C. Pontchartrain phase sites are moderately common in the Pontchartrain Basin. The most notable of these sites are the Tchefuncte site (16ST1) in St. Tammany Parish, and the Big Oak (16OR6) and Little Oak Island (16OR7) sites in Orleans Parish (Ford and Quimby 1945; Neuman 1984; Shenkel 1974, 1981, 1984; Shenkel and Gibson 1974). A later Beau Mire phase has been proposed to encompass the period from ca. 250 B.C. to A.D. 1, although this phase is not accepted by all workers (Shenkel 1981, 1984; Weinstein 1986; Weinstein and Rivet 1978).

Tchefuncte sites in the study area are confined to the areas around Lake Pontchartrain and appear to be associated with relatively early river channels and lake margins. Tchefuncte subsistence is fairly well known. Excavations at the Big Oak Island and Little Oak Island sites suggest an emphasis on hunting and fishing (Shenkel 1981, 1984). Shenkel (1981:331) suggests that these two sites initially had occupations which supported "permanent or semi-permanent villages." Later there is evidence that there may have been functionally different occupations, with Big Oak Island evolving into a "specialized" shellfish and fish procurement and processing station (Shenkel 1981, 1984) which was "unquestionably associated with the contemporaneous village component at the Little Oak Island site" (Shenkel 1981:331-332, 1984). Shenkel (1981:333-334) emphasizes the narrow range of exploited foods (notably *Rangia* clams and marsh-estuarine fish and mammals) in the Pontchartrain phase, noting that many other equally productive resources were virtually ignored.

Farther west, at the Morton Shell Mound (16IB3), excavations in the Tchefuncte component revealed a more broadly adapted faunal diet, and also recovered a large and well preserved floral sample (Byrd 1974). Floral remains include seeds of squash (*Cucurbita pepo*) and bottle gourd (*Lagenaria siceraria*), along with hickory nuts, acorns, plum, grape, and persimmon. Although the presence of squash and bottle gourd were initially cited as an example of early Woodland horticulture (Byrd 1976; Byrd and Neuman 1978), recent evidence suggests that such an assumption may not be warranted (Fritz and Kidder 1993; see also Neuman 1984:119).

Social complexity was relatively minimal in the Tchefuncte culture. Settlements are generally small and lack certain evidence of earth works or other complex features. Burials are common, but rarely, if ever, contained grave furnishings. The evidence for earthen structures, such as mounds, is debatable. Low, domed mounds have been associated with Tchefuncte culture sites, but the data for securely attributing these constructions to the Tchefuncte people are limited (Neuman 1984:117, 135; Toth 1988:27). The best candidates for Tchefuncte mounds are found in the Lafayette, Louisiana, area, and are centered on the Lafayette Mounds (16SM17) (Gibson and Shenkel 1988; Weinstein 1986). This mound group, along with at least three others in the immediate area, are suggested to represent mortuary centers which served an otherwise dispersed population (Gibson and Shenkel 1988; Weinstein 1986:117). Unlike earlier Poverty Point culture, Tchefuncte people did not import non-local or exotic lithics to their sites, nor did they engage in lapidary art to the best of our knowledge.

The Marksville Period

The Marksville period is generally subdivided into two sequential temporal units, early Marksville and late Marksville. The early Marksville period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7, 17-18, 886; Toth 1988). The Hopewell Tradition has two major centers of development in Ohio and Illinois; this tradition dates to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere" (Caldwell 1964). In addition to diagnostic pottery types of the Marksville period, conical burial mounds were characteristic of the culture (Toth 1988). Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168; Toth 1974, 1988).

The late Marksville period appears to witness an increase in cultural diversity in the Lower Mississippi Valley and also perhaps on the coast. In much of the Lower Mississippi Valley, the Issaquena culture developed over several centuries beginning around A.D. 200 (Greengo 1964; Gibson 1977; Phillips 1970; Williams and Brain 1983). Along the peripheries of the Lower Mississippi Valley, at least in the northern end of the valley, other cultural vari-

ants developed which were clearly contemporaneous with Issaquena but did not share the same cultural content (Belmont 1984; Jeter and Williams 1989; Ring 1986). In the Louisiana coastal zone, the cultural situation is very vague and poorly understood. Marksville period occupations are relatively rare and are best known from several large, evidently mounded sites. The precise chronology of these occupations is not well defined, but there may be local analogs to the Marksville and Issaquena cultures.

Early Marksville occupations in the eastern coastal zone are identified with the Labranche phase (Phillips 1970:898, Figure 444). This phase was initially defined because there were early Marksville-like ceramics at all three of the "original Tchefuncte middens: Tchefuncte, Big Oak Island, and Little Woods" (Phillips 1970:898). Based on work by Saucier in the Pontchartrain Basin, Phillips added several more sites, including the Labranche (16SC11), Bayou Trepangnier (16SC10), Booth (16LV6) and Doucette (16ST44) sites (Phillips 1970:Figure 444). The definition of Labranche phase sites principally consisted of sites which yielded examples of Marksville Stamped, *var. Crooks* in association with other Marksville Stamped sherds. In most instances, these components are identified on the basis of "pitfully (sic) small samples" (Phillips 1970:898). In several cases, these associations occurred in sites which did not yield evidence of an earlier Tchefuncte component (Phillips 1970:898). As noted by Gagliano et al. (1979:4-4), the Labranche phase is "overextended geographically." They further argue that to "extend it [the Labranche phase] into the Barataria Basin would only aggravate an already unsatisfactory situation." Nonetheless, Labranche is still used in regional culture historical summaries (Perrault and Pearson 1994:Figure 6), but it appears to be employed only as a name to fill an otherwise blank space.

Excavations at the Coquilles site (16JE37) at the junction of Bayou Des Familles and Bayou Coquilles yielded important evidence concerning the Marksville period occupation in the Barataria region (Beavers 1982a; Giardino 1984a, n.d.). The Coquilles site once consisted of at least one, and possibly two earth and shell mounds and an associated midden scatter principally oriented along Bayou Coquilles (Beavers 1982a; Speaker et al. 1986). The mounds, located at the confluence of the two bayous, have been severely impacted by modern highway construction and earlier historic shell mining (Beavers 1982a; Swanson 1991). Excavations conducted by Richard Beavers of the University of New Orleans has resulted in the largest published data base for the site (Beavers 1982a, 1982b). In addition, excavations conducted by National Park Service personnel resulted in the recovery of important data. Information from these latter excavations, along with much of Beavers' work on the Coquilles site mound, remains unpublished and largely unanalyzed (Ted Birkedal, personal communication 1994). Sixteen radiocarbon dates have been obtained from various contexts at the Coquilles site (Table 2). These dates suggests a very long habitation span, covering the period from ca. A.D. 150 to the mid-seventeenth century.

Based on his excavations in the Public Access Facilities Zone at the Coquilles site, Beavers (1982a:20-21) suggested the establishment of the Coquilles phase to mark the period ca. A.D. 1-300. He argued that the identification of this phase could be supported by the Coquilles data, and that the main ceramic hallmarks of this phase were Marksville Incised, *vars. Sunflower*, *Marksville*, and *Prairie*, and Marksville Stamped, *vars. Old River*, and *Marksville*. In addition to these ceramic varieties, Beavers notes the relatively rare presence of Churupa Punctated, *vars. Boyd* and *Hill Bayou*; Mabin Stamped, *var. Crooks*; and Pontchartrain Check Stamped, *var. Canefield* (1982a:20-21). In addition, Beavers (1982a) also notes the presence of crosshatched, notched, and "slanted incised" rims, which are generally considered to be diagnostic of early Marksville contexts (Toth 1979, 1988).

Beavers also indicated that there may have been two separate components at the site, and that these occupations were separated by a "sterile" zone of flood deposited silt. This interpretation is open to question, however, because these so-called "flood" deposits are not

Table 2. Radiocarbon Dates from the Coquilles Site, 16JE37

Site	Lab No.	Material	Prov.	Years B.P.	Cal. A.D./B.C. (B.P.)	Calibrated Ranges	Relative Area
						A.D. (B.P.)	Under Prob. Dist.
Coquilles	Not specified *	charcoal	Unit 10,	1,760±90	A.D. 249	A.D. 54-454	0.99
16JE37			Level 8		-1701	(1896-1496)	
Coquilles	Not specified *	charcoal	Unit 10,	1695±205	A.D. 345	118 B.C.-A.D. 722	0.99
16JE37			Level 1 of F. 2		-1605	(2068-1228)	
Coquilles	Not specified *	charcoal	Unit 10,	1750±80	A.D. 253, 304, 315	A.D. 80-438	1.00
16JE37			Level 12		(1697, 1646, 1635)	(1870-1512)	
Coquilles	Not specified *	charcoal	Unit 10,	1835±75	A.D. 143	A.D. 13-349	0.99
16JE37			Level 14, F. 4		-1807	(1937-1601)	
Coquilles	DIC-2970 #	charcoal	Base of midden	1670±40	A.D. 405	A.D. 319-459	0.84
16JE37					1545	(1631 - 1491)	
Coquilles	DIC-3126 #	shell	Associated with	1630±50	A.D. 423	A.D. 328-554	0.98
16JE37			house remains, Unit 0		-1527	(1622-1396)	
Coquilles	DIC-3124 #	shell	Associated with	1540±50	A.D. 544	A.D. 425-624	1.00
16JE37			house remains, Unit 2		-1506	(1525-1326)	
Coquilles	DIC-3125 #	shell	Bottom of post,	1500±50	A.D. 596	A.D. 490-650	0.89
16JE37			Unit 2		-1354	(1460-1300)	
Coquilles	DIC-3127 #	shell	Level 4,	1380 ± 40	A.D. 660	A.D. 604-717	0.96
16JE38			Unit 0		-1290	(1346-1233)	
Coquilles	DIC-2973 #	shell	Shell deposit at	960 ± 50	A.D. 1037	A.D. 1003-1204	1.00
16JE37			base of midden		-913	(947-746)	
Coquilles	DIC-2969 #	charcoal	Midden lens of burned	840 ± 45	A.D. 1222	A.D. 1154 - 1284	0.88
16JE37			shell and ash		-728	(796-666)	
Coquilles	DIC-2972 #	charcoal	Midden lens of burned	780 ± 45	A.D. 1275	A.D. 1181-1297	1.00
16JE37			shell and ash		-675	(769-653)	
Coquilles	DIC-3128 #	shell	Midden	700 ± 50	A.D. 1293	A.D. 1248-1396	1.00
16JE37					-657	(705-554)	
Coquilles	DIC-3123 #	shell	Unit 2, natural	560 ± 40	A.D. 1405	A.D. 1377-1427	0.60
16JE37			level 2		-545	(573-513)	
Coquilles	DIC-2968 #	charcoal	Grid 2, 100 cmbd,	440 ± 80	A.D. 1446	A.D. 1394-1649	0.99
16JE37			toe of earth midden		504	(556-301)	
Coquilles	DIC-2971 #	charcoal	Lower toe of lens of	300 ± 90	A.D. 1641	A.D. 1435-1703	0.79
16JE37			shell and ash		-309	(515-247)	
* Dates from Beavers (1979:12); these samples were dated by the University of Georgia but the lab numbers were not published.							
# Dates from Birkadel (1985). unpublished manuscript on file. Jean Lafitte National Historical Park, New Orleans.							

sterile (see the level-by-level counts in Beavers 1982a), and they occur only across one relatively limited area (Giardino n.d.). Later excavations by Birkedal (Giardino 1984a, n.d.) failed to replicate this "flood" deposit situation, but duplicated the culture historical sequence reasonably well (Giardino 1984a). Beavers' excavations of Unit 10 on the mound at the Coquilles site seem to indicate a later Marksville occupation contemporary with the Magnolia phase (Beavers 1979). Here, ceramics included Marksville Incised, *vars. Goose Lake, Spanish Fort,* and *Yokena*; Marksville Stamped, *vars. Crooks, Manny, Newsome,* and *Troyville*; and Churupa Punctated, *var. Churupa*. The presence of *var. Crooks* along with several cross hatched rims may indicate either an earlier component or some form of mixing, possibly the result of mound construction. In addition, the earliest dated strata at the Coquilles site come from this excavation (Table 2).

The presence of a number of later radiocarbon dates and indications of later ceramics demonstrate that the Coquilles site supported a major occupation well into the later prehistoric periods. The upper surfaces of this site were removed beginning in the early historic period, and thus, we can never know the full extent of the occupation.

The concept of a Coquilles phase has not penetrated into the literature of the archeology of the coastal zone for a number of reasons. One important reason has been the lack of published data from the National Park Service excavations. There is also a great deal of ambiguity in the identification of some of Beavers' ceramics, especially since none of his excavated sample has been illustrated. The inconsistency of the radiocarbon dates shown in Table 2 is also disconcerting, since none of the dates from the non-mound excavation units, where the early Marksville component is recognized, date to the accepted range of the early Marksville culture.

There are also some exaggerated claims made for these excavations. For example, Beavers claims to have identified one or two Marksville structures based on "possible post molds" with incomplete arcs (if there are even arcs at all) (Beavers 1982a:14, 36-37, 38-39, unpaginated floor plan for excavation units 6, 17, 20, and 23, Analysis Group II). Other claims for structures at the Coquilles site (Giardino n.d.) are equally ambiguous, especially given that the data remain unpublished. Floor plans for the two National Park Service excavations (Birkedal, personal communication 1994) indicate the possible presence of structures at the Coquilles site, but in neither case do they unambiguously substantiate claims for circular structures in the Marksville period. Beavers indicates that the site represented a permanent "residential and ceremonial habitation" site, with structures made of "wattle and daub and probably circular in form" (Beavers 1982a:38). He further argues for the presence of a "well developed system of mortuary ceremonialism" based on the possible presence of conical burial mounds said to have been destroyed during the 1930s. The conclusions reached by Beavers in his summary do not seem warranted given the data (1982a, 1982b:113-121).

In sum, the Coquilles phase remains enigmatic in form and content. There seems to be little doubt as to the claim for an early Marksville occupation of the Bayou Des Familles channel area, although its extent and content are unknown at present. Surveys of the Bayou Des Familles channel indicate the possible presence of Marksville period (phase or cultural relationship unknown) sites consisting principally of small shell scatters (Beavers 1982b). Evidently, there is an early Marksville occupation at the Boudreaux site (16JE53) (Beavers 1982a:26; 1982b:110). According to Beavers (1982b:110), Boudreaux consists of a one meter-tall mound measuring 13 meters in diameter. Excavations by Lamb (1982, cited in Beavers 1982b) found a burial located on a prepared clay surface. The ceramics "associated with the mound and with the prepared clay surface clearly dates this structure to the early Marksville period" (Beavers 1982b:110). A radiocarbon sample taken from "the lower levels of an associated midden deposit" provided a date of 1855 ± 190 B.P. (no lab number given;

Beavers 1982b:110). This date yields an age of cal. A.D. 131, but a calibrated age-range of B.C. 368-A.D. 600.

Additional early Marksville occupations in the lower Barataria region include Kenta Canal (16JE51), Dupree Cutoff I (16JE8), Dupree Cut Off II (16JE9), Three-Bayou Field (16JE98), Isle Bonne (16JE60), and Bayou Cutler (16JE3) (Gagliano et al. 1979:4-8--4-19; Weinstein 1995). The early Marksville occupation at Bayou Cutler is evidently the best representation of this time period outside of Coquilles (and possibly Boudreaux). The Bayou Cutler site consists of a *Rangia* and oyster midden located at the junction of Bayou St. Denis and Bayou Cutler (Gagliano et al. 1979:Figure 4-7; Kniffen 1936; Weinstein 1995). Surface collected sherds from this site include Baytown Plain, *var. Marksville* (but the paste is very chalky and Gagliano et al. [1979:Figure 4-3, Appendix A, site 16JE3] suggest that these sherds could be classified as Tchefuncte Plain), some with cross hatched and slanted line rim treatments. Decorated pottery consisted of Marksville Incised, *var. Hill Bayou*; Marksville Stamped, *vars. Marksville, Old River*, and *Sunflower*; Mabin Stamped, *vars. Mabin* and *Point Lake*; Churupa Punctated, *vars. Boyd, Hill Bayou*, and *unspecified*; as well as Indian Bayou Stamped, *var. Cypress Bayou* (Gagliano et al. 1979:4-3--4-5). The sherd of Churupa Punctated, *var. unspecified* was found among bones of a human bundle burial eroding from the Bayou St. Denis shoreline (Gagliano et al. 1979:4-14; Figures 4-11--4-13; Weinstein 1995). Two test pits excavated to water level suggested the presence of a stratified midden of *Rangia* with the early Marksville component being the earliest (Gagliano et al. 1979: Appendix A; Weinstein 1995).

Evidence for an early Marksville period component in the lower Barataria Basin seems to be overwhelming, even if sites are not especially well represented. As noted above, the culture historical placement of these components is still ambiguous, and many of the claims about the form and cultural content of this time period seem unwarranted or exaggerated. Other than the presence of a very few Tchefuncte or Tchefuncte-like sherds from sites in the region (Gagliano et al. 1979:4-8, Figure 4-1), the earliest evidence for the occupation dates to the early Marksville period. Some of the early Marksville ceramics, both plain and decorated, are on a very chalky paste suggestive of Tchefuncte Plain. This may be taken to suggest that these early Marksville occupations were directly related to earlier cultural groups in the region. Shenkel makes this point in regards to the early Marksville component at the Oak Island sites. He notes that with a few exceptions, "all of the basic [ceramic] techniques attributed to Marksville... are known from earlier Tchefuncte contexts" (1981:146-147). Evidently the formation of the Barataria-Des Familles channel system was accomplished at this time or slightly earlier and encouraged the movement of peoples into the area to exploit the newly developed marsh and bay environments.

The late Marksville period occupation in the eastern Louisiana coastal zone is assigned to the Magnolia phase without attribution as to its cultural (as opposed to temporal) affiliation (Phillips 1970:898-899). The Magnolia phase is generally dated to the period ca. A.D. 200-400 (Perrault and Pearson 1994:Figure 6), although radiometric age determinations are not available from secure archeological contexts. When Phillips established the Magnolia phase, he noted that, "by definition, this phase consists of Marksville period components east of the present Mississippi River" (1970:898, Figure 444). Phillips further noted that collections from sites of this phase showed "varieties and modes that would be classified as late Issaquena if found in the Yazoo region" (1970:898-899). Magnolia phase components were identified by modes and by the absence of Crooks Stamped (now recognized as Mabin Stamped, *var. Crooks*), and the presence of later Marksville markers, including Marksville Stamped, ("probably but not necessarily" *var. Troyville*), Yokena Incised, and unspecified variants of Churupa Punctated (Phillips 1970:899).

The best known site of the Magnolia phase is the Magnolia Mounds site (16SB49), located on a crevasse distributary off of Bayou La Loutre in St. Bernard Parish (Gagliano et al. 1982:Figure 2-4; McIntire 1958b:65-66, Figures 24-25). Magnolia Mounds consists of at least 11 "earth and shell mounds, both conical and pyramidal, and extensive areas of *Rangia* and black earth middens" (Gagliano et al. 1982:20). Most of the mounds at the site are of undetermined shape, but at least one, Mound B, is a conical mound that was "probably constructed" during the Magnolia phase occupation (Gagliano et al. 1982:22). At least two of the large, flat-topped platform mounds are attributed to the late prehistoric Bayou Petre phase, and the extent of the Marksville occupation at the site is unknown (Gagliano et al. 1982:22, Figures 2-8, 2-9; McIntire 1958a:66; Phillips 1970:899). Other Magnolia phase sites are found along levees of the relict St. Bernard distributary system (Gagliano et al. 1982:Table 2-7). Marksville period sites have been identified as far east as the Chandeleur Islands, suggesting that this arc of islands once marked the minimum eastward extent of the St. Bernard distributary system (McIntire 1958:66, Plates 4a-4b).

Although Phillips initially defined the Magnolia phase to encompass sites east of the present course of the Mississippi, late Marksville period occupations are found in the lower Barataria region west of the modern Mississippi (Gagliano et al. 1979). Based on the radiocarbon dates from the Coquilles site, it is evident that there was a late Marksville occupation associated with the midden deposits to the west of the mound area. Typological analysis has not discriminated this component relative to the described stratigraphy, but clearly there are late Marksville types and varieties present at the site (Giardino 1984a). Our interpretation of the available data suggests that the late Marksville component at Coquilles is especially well represented in test pits 0 and 1, which were excavated near Highway 45 and west of the mounds (Ted Birkedal, personal communication 1994). In these units, they recovered a relatively large number of sherds which are typologically associated with the Issaquena culture occupations in the Yazoo Basin, in levels between roughly 60 and 110 cm below datum. These ceramics included examples of Baytown Plain identified as being like *vars. Marksville* and *Satartia* (including rim modes similar to those associated with Issaquena, such as "Arcadia", "DeSha", and "Peak"); Marksville Incised, *vars. Marksville* and *Yokena*; Marksville Stamped, *vars. Manny*, *Newsome*, and *Troyville*; Churupa Punctated, *vars. Churupa* and *Thornton*; and rare examples of Catahoula Zoned Red (Giardino 1984a:16-32). Radiocarbon dates from these contexts date this assemblage from ca. A.D. 319-650 at two standard deviations. At least one of the so-called houses (Giardino n.d.) reported from the Coquilles site is evidently associated with this component.

Late Marksville ceramics have also been recovered from sites farther down the Barataria waterway. Most notably, there is a small but well defined component at the Bayou Cutler site (Gagliano et al. 1979:4-19--4-27, Figures 4-17 and 4-18, Appendix A; Weinstein 1995). Additional components include Isle Bonne (16JE60), Kenta Canal, Fleming (16JE36), Bayou Villas (16JE68), Rosethorn School (16JE50), and Shipyard (16JE85). These sites are clustered around the confluence of Bayou Villas and Bayou Barataria, an area which remained important into the late prehistoric period. It is possible, however, that some of these components, which were recognized by the presence of small surface collected samples, may actually date to the Mississippi period, when clay tempered curvilinear incising was once again in vogue. Attributions of Marksville components at the Sims site (16SC2) demonstrate this problem. Initial discussions of this site noted the presence of Marksville-like incising on clay tempered pottery (Davis and Giardino 1981). Only later was it recognized that these sherds actually represented a Mississippi period use of clay tempered pottery (Giardino 1985). Analysis of ceramics donated to the Tulane Middle American Research Institute in the 1960s demonstrates that the so-called Marksville component at the Oyster Road site (16JE84) (Gagliano et al. 1979:4-22--4-23, Plate 4-2) was misidentified and actually belongs in the Mississippi period. Sherds from this site which were initially classified as Marksville Incised can now be identified as Buras Incised, *vars. Oyster Road* and *unspecified*.

The only components which can be securely attributed to the late Marksville period are from Bayou Cutler, Isle Bonne, Bayou Villas, and Bayou Dupont-Dupre Cut (16JE91) (which might, in fact, be the spoil from the Bayou Dupont site [16JE7]). Ceramics from these sites include classic modes on Baytown Plain, *var. Satartia*, and Marksville Incised, *vars. Goose Lake*, *Liest*, and *Yokena* (Gagliano et al. 1979:Figures 4-17 and 4-18). A single sherd of St. Andrews Complicated Stamped was recovered from Bayou Cutler, suggesting "indirect contact through trade, if not direct contact with Indians from... the Florida Gulf Coast" (Gagliano et al. 1979:4-23). The absence of Marksville Stamped sherds is peculiar, especially given their prevalence at the Coquilles site (Beavers 1982a; Giardino 1984a). There is not at present an obvious explanation for the different ceramic types and varieties found along Bayou Barataria, except to hypothesize that the Coquilles collection is more representative only because it is a larger site and has been extensively excavated.

The Baytown Period

The Baytown period has been defined as the interval between the end of Hopewellian inspired Marksville culture and its later Issaquena and related descendants, and the emergence of Coles Creek culture. The Baytown period is often referred to as the "Troyville period" by Delta archeologists. Because of the perceived lack of diagnostic markers for the period in southeastern Louisiana, it is often assimilated with the subsequent Coles Creek period, and the two are together referred to and discussed as "Troyville-Coles Creek cultures" (e.g., Neuman 1984). Gagliano et al. (1979:4-20) observed that the "Baytown period probably needs more work than any other period in coastal Louisiana."

Historically, the interval between roughly A.D. 400 to 700 has been one of the most difficult to understand from a culture historical perspective. When it was first recognized in the coastal zone by McIntire (1954, 1958), this period was designated Troyville, a name taken from the culture sequence developed by Ford (1951) at the Greenhouse site (16AV2) (Gibson 1984; Jeter and Williams 1989:152). As noted by Gibson (1984:32-35), Troyville at this time was a pottery complex as well as a temporal and cultural unit. Researchers in the coastal zone adopted the designation as a temporal unit (McIntire 1958a:5, following Ford 1951). As more sites were encountered and as further research was undertaken, Troyville began to expand as a designation of both temporal and cultural significance (Gibson 1984:40-42). Still, to most researchers working in the coastal zone (and who had access only to surface collections), Troyville was largely, if not wholly, just a pottery complex. Most importantly, the typology of this pottery complex was ultimately derived from farther north (Ford 1935a, 1935b, 1939, 1951), and thus, Troyville ceramics in the coastal zone could not be differentiated from later Coles Creek pottery in a consistent manner. The Troyville "period" was thus inseparable from later Coles Creek, and the two were hybridized by the addition of a hyphen, thus resulting in a "Troyville-Coles Creek" period (Gibson 1984; Jeter and Williams 1989:152; Neuman 1984).

When Philip Phillips undertook his monumental synthesis of the prehistory of the Lower Mississippi Valley, he reorganized the cultural nomenclature to reflect the difference between temporal units ("periods") and cultural entities ("cultures") (Phillips 1970). In Phillips' scheme, the temporal interval between ca. A.D. 400-700 became the Baytown period. During this time, a number of geographically distinct cultures were identified, each defined by the presence of distinctive ceramic complexes and traits (Phillips 1970:922-923). These distinctive ceramic complexes were designated as phases, and are the basic units used by Phillips to discuss the distribution of cultures in the Lower Mississippi Valley. Phillips was, however, by his own admission (1970:923), "evasive" in his use of the terms culture and period. Troyville, as a result, was still a rather nebulous category, especially on the coast (Gibson

1984). A lasting contribution of Phillips' synthesis was the use of the type-variety system of ceramic classification, which is now the centerpiece of most culture historical reconstructions.

Phillips designated Whitehall as the Baytown period archeological phase in the Louisiana coastal zone. He did not, however, attempt to clear up the use of the term Troyville on the coast, although he preferred to restrict its use to the archeological phase covering the Baytown period in the southern Tensas and Black River areas. Subsequent to Phillips' work, Troyville has continued to be used in a variety of ways, both to designate a temporal unit, and to identify a cultural entity (Gibson 1984). In the early 1980s, archeologists continued to refine the culture history of the Lower Mississippi Valley, and especially the cultural units encompassed within Phillips' Baytown period. In the central and northeast parts of Louisiana, the Troyville culture concept was revived and defined to cover the cultural entities in that area (Belmont 1984; Gibson 1984). Troyville culture designated a complex of material remains and associated behaviors (such as mound burials, communal ceremonialism, and the use of bathtub-shaped pits). This cultural complex was spatially restricted to the areas from roughly Baton Rouge north to the Arkansas-Louisiana state line (Belmont 1984; Kidder and Wells 1992).

With Phillips' revival of the Baytown period concept, and Belmont's restriction of the Troyville culture, the situation in the coastal zone became thoroughly ambiguous. On the one hand are those who continued to use the notion of Troyville-Coles Creek for the temporal unit (Jeter and Williams 1989:152; Neuman 1984), while on the other hand, some scholars prefer a different approach, suggesting that "another cultural designation is warranted" for the Baytown period peoples of the coastal zone (Gibson 1984:59). A point little appreciated by scholars working in the area was brought out by Gibson in his discussion of the difficulties involved in resolving the so-called Troyville-Baytown issue:

> this typological problem has at least provided a clue that the happenings along the coast... were sufficiently distinctive from inland historical sequences to set the coast off as a separate culture area deserving of a special chronology of its own. **The coast simply cannot be adequately conceptualized by extrapolations from inland culture histories** [1984:41-42, emphasis added].

When Phillips (1970:911-912) established the Whitehall phase to encompass the Baytown period in the Louisiana coastal zone, he specifically noted that the phase "would be more accurately described... as a collection of widely dispersed sites" (1970:911) rather than a coherent archeological manifestation. Indeed, his distribution maps have Whitehall phase sites from north of Baton Rouge to the Barataria Basin, and from the western Chenier Plain to eastern St. Bernard Parish (Phillips 1970:Figure 445). Subsequently, Whitehall became the broad temporal and culture historical unit into which all Baytown or Troyville material has been subsumed (see Wiseman et al. 1979:4.9-4.10). There has been no attempt to examine Whitehall from either a spatial or temporal perspective, although Phillips (1970:911-912) did note several possible Whitehall phase clusters (see also McIntire 1958a).

Phillips' classification of Whitehall phase components was accomplished by recognition of several important ceramic diagnostics. Most notable among these were Larto Red and Woodville Zoned Red (Belmont and Williams 1981; Phillips 1970:911). Where these ceramic diagnostics were absent, Phillips fell

> ...back on rather devious expedients: (1) presence of sherds classified as Troyville Stamped, Yokena Incised, or Churupa Punctated, without Marksville Stamped or Marksville Incised; (2) presence of Mazique Incised, French Fork Incised, Chevalier Stamped, or Chase Incised, without Coles Creek Incised or Pontchartrain Check Stamped (1970:911).

The problem, of course, is that there are few excavated contexts with which to define the Whitehall phase. Phillips' entire discussion of the phase was based on surface collections obtained by McIntire (1958a), and Saucier (1963). Work by Weinstein (1974) further fleshed out the content of the Whitehall phase on the north shore of Lake Pontchartrain. Weinstein recognized the Whitehall phase at the Whitehall site (16LV19) and elsewhere along the Amite River as containing a wide variety of typical Troyville markers. These included Larto Red, *var. Larto* as a principle diagnostic, along with one and two-line variants of Coles Creek Incised (*vars. Hunt*, *Stoner*, and *Wade*); Churupa Punctated, *var. Thornton*; Evansville Punctated, *vars. Amite*, *Braxton* and *Evansville*; French Fork Incised, *vars. Lafayette* and *Wilzone*; Hollyknowe Ridge Pinched, *var. Hollyknowe*; Mazique Incised, *var. Bruly* (identified as Alligator Incised, *var. Alligator*); and Mulberry Creek Cord Marked, *var. Edwards* (Weinstein 1974). These ceramic characteristics linked the Whitehall phase with occupations farther north and west, especially to occupations centered at the Kleinpeter site (16EBR5) near Baton Rouge, where an important Troyville component has been identified (D. Jones et al. 1993). South of Lake Pontchartrain, however, no sites supported the same diversity of ceramic types and varieties, and more to the point, there were no excavated components. Some of the Whitehall phase markers, such as Larto Red, Evansville Punctated, *var. Amite*, French Fork Incised, *var. Lafayette*, or Mazique Incised, *var. Bruly*, were identified in the Barataria Basin, but never in good associations with datable contexts. It is evident that the Whitehall phase is a misnomer when applied to sites south of Lake Pontchartrain and east or west along the coastal zone, as acknowledged by Phillips, and that its limits are stretched beyond the ability of the data to support such a construct.

Springer's (1973) excavations at the Bruly St. Martin site (16IV6) represents the largest excavated Baytown period occupation in the Barataria Basin. The data from this site are difficult to interpret due to stratigraphic mixing and the presentation of the typology (the type-variety system was not employed, making precise comparisons difficult; Springer used the type names but did not use the variety concept as presently employed in the region). At Bruly St. Martin, Larto Red is the dominant type in the lowest levels of the trench excavations (Springer 1973:50-58). Troyville Stamped, Yokena Incised, and Woodville Zoned Red are also important in the lower levels but are waning in their popularity (Springer 1973). Pontchartrain Check Stamped is virtually absent from the lower levels, but Coles Creek Incised, French Fork Incised, Mazique Incised, and Rhinehart Punctated are all present in relatively small amounts, and their frequency increases through time (Springer 1973:Figure 19).

Since Springer did not differentiate the varieties of each type, it is difficult to specify the exact culture historical position of this component. The presence of small amounts of Troyville Stamped and Yokena Incised indicated a relatively early Baytown period date, although the stratigraphy and seriation suggested a strong continuity into the later Baytown period (Springer 1973). This later Baytown occupation may have been best identified by the presence of Woodville Zoned Red and Rhinehart Punctated ("variety 2"), which Springer (1973:71) noted was similar to the "six mile" rim treatment. Both of these types, but especially the variety 2 Rhinehart Punctated, were found in the lower levels of the excavations. These data taken together indicated that the Baytown period occupation at Bruly St. Martin spanned much of, or even all of, the temporal span between roughly A.D. 400-700. The radiocarbon dates from Bruly St. Martin gave general support to the dating of the Baytown component as a whole, although their stratigraphic relationship may have been jumbled (Springer 1973:92, 95-96).

Another excavated component of relevance to this discussion comes from the Shell Beach site (16SB39) in St. Bernard Parish (K. Jones et al. 1993:81-136). In Excavation Unit 3, an early Baytown component was found, with sherds of Larto Red, *var. unspecified*, Marksville Incised, *var. unspecified* (similar to *vars. Anglim* or *Vick*), and Marksville

Stamped, *var. Bayou Rouge* (K. Jones et al. 1993:134-136). Surface collections provided other evidence of early Baytown period ceramics, including an unspecified variety of Churupa Punctated closely resembling *var. Watson* in the Tensas Basin. Several rim modes in the surface collections are also thought to be diagnostic of this time period (K. Jones et al. 1993:135-136). A shell sample from Feature 2 yielded a radiocarbon date of 1760 ± 60 B.P. (Beta-55112), which provides a cal AD range at two standard deviations of A.D. 128-412. This date is a bit early for what we would expect for an early Baytown occupation, but it is within the general age span and represents the earliest Baytown period date in the coastal zone at present.

Brief excavations and testing at several sites on Grand Bayou in St. Charles Parish revealed important evidence concerning the Baytown period occupation in the coastal zone (Davis 1982). Although the initial report concerning the site suggested that the earliest occupation of these sites may have been as early as the Late Marksville period (Davis 1982), subsequent reanalysis indicates that this is not likely, and that the first components date to the early Baytown period. At sites 16SC42, 16SC43, and 16SC45, small samples of diagnostic pottery suggesting early Baytown occupations were noted. This was especially true of 16SC42, where Marksville Incised, *var. unspecified* sherds were found, which resemble *vars. Anglim* and *Vick* (Bitgood 1989). At 16SC45, several unspecified Marksville Incised sherds were recovered in the surface collections, including one which could be defined as *var. Anglim*. Later Baytown period components were noted at all three sites, and these can be defined by the presence of Larto Red (which is rare), French Fork Incised, *vars. Brashear*, *Laborde*, and *Lafayette*; Mazique Incised, *var. Bruly*; and several examples of the "six mile" rim treatment. Pontchartrain Check Stamped is absent at these sites, and Coles Creek Incised is present only in the form of single lines incised below the rims of large jars. The predominant plain ware at these three sites is a very thick, crude form of Baytown Plain. Rims are frequently thickened, and several French Fork lugs are found.

One of the best examples of the components dating to this time in the coastal zone is found at the Gibson Mounds (16TR5), where Weinstein et al. (1978) found a number of late Baytown period diagnostics. Much of this material came from surface collections, but an important group of sherds were found in Zone III of Mound C (Weinstein et al. 1978:168-198). The Baytown period materials from Zone III included Coles Creek Incised, *vars. Hunt* and *Stoner*, and Evansville Punctate, *var. Amite* (the "six mile" treatment). Materials attributed to the early Coles Creek occupation were Coles Creek Incised, *var. Campbellesville*; French Fork Incised, *var. French Fork*; Mazique Incised, *var. Mazique*; and Pontchartrain Check Stamped, *var. Pontchartrain* (Weinstein et al. 1978). Weinstein et al. interpret the data from Zone III in Mound C to suggest that this is a mixed assemblage with both late Baytown and early Coles Creek diagnostics present (1978:189). An alternate interpretation is that Zone III is a late Baytown deposit in which later Coles Creek markers are first appearing. A radiocarbon date of 1075 ± 60 BP [UGa-1616 (cal A.D. 977)] was obtained from a clump of charcoal found at the base of the profile in Zone III (Weinstein et al. 1978:184). This date seems to support the interpretation that the Baytown period ceramics were mixed with later deposits. Other Baytown period ceramics found on the surface include Larto Red, *vars. Larto* and *Silver Creek*; Mazique Incised, *var. Bruly*; and Woodville Zoned Red, *var. Woodville* (Weinstein et al. 1978; Weinstein and Kelley 1992:36).

A late Baytown period occupation has been detected in surface collections at the Richeu Field site (16TR82), located 2.4 km southwest of Gibson Mounds. Here, Weinstein et al. (1978) recovered sherds of Larto Red, *var. Larto*, and Evansville Punctated, *var. Amite*. Similar components have been detected in surface collections from the Lake Penchant (16TR4) (Weinstein and Kelley 1992:218-230) and Bayou Penchant (16TR76) (Weinstein and Kelley 1992:329-330) sites. In both these instances, diagnostics included Larto Red, *var. Larto*, and Woodville Zoned Red, *var. Woodville*. The Lake Penchant site also yielded sherds of Larto

Red, *var. Silver Creek*, Coles Creek Incised, *var. Stoner*, and Mazique Incised, *var. Bruly*. Weinstein and Kelley (1992:226) further note the presence of several early looking varieties of French Fork Incised at the site, but do not assign them to the Baytown period because they lack sound stratigraphic associations.

The "type" site for Baytown period occupations in the lower Barataria region is evidently the Isle Bonne site (16JE60), which forms one of a cluster of sites known as the Barataria complex (Beavers 1982b; DeMarcay n.d.; Holley and DeMarcay 1977). Amateur excavations at this site revealed a stratified Baytown period occupation associated with two low rises formed by the accumulation of *Rangia* shell (DeMarcay n.d.; see also Gagliano et al. 1979:Appendix A). The data for interpreting this occupation come from the brief published account of the work at Isle Bonne (Beavers 1982b), and from DeMarcay's analyses on file at the University of New Orleans (DeMarcay n.d.). The author also inspected these ceramics and updated some of the typology. The stratification of the reported excavations from area A indicate that the deposits consist of undifferentiated shell midden overlying and evidently interfingered with sterile mottled silt (Beavers 1982b). Excavations were evidently terminated at 150 cm due to flooding, and it is uncertain if the base of the cultural layers was reached (DeMarcay n.d.). The published profiles seem to suggest an artificial construction resulting in the interfingering of shell and sterile silt deposits, but it is not possible to discern whether these mounds were constructed purposefully or not.

Ceramics recovered from the area A excavations show a high frequency of Larto Red, *var. Larto* (often with bulbous thickened rims), an almost equally high frequency of single-line incised rim sherds classifiable as Coles Creek Incised, *var. Phillips*. Also present were numerous sherds of French Fork Incised, *var. Brashear*, often with decorated rim lugs, and other unspecified variants of well executed French Fork Incised pottery. One of the most interesting pottery types was Woodville Zoned Red, *var. Woodville*, which was present in modest quantities. Several of the Woodville sherds showed interior incised line terminations emphasized in a typical French Fork Incised style. Two sherds of a thin, hard, black filmed pottery were also recovered. Rounding out the Baytown period pottery list for the site were Evansville Punctated, *var. unspecified* (probably similar to *var. Duck Lake*); Indian Bay Stamped, *var. unspecified*; Marksville Incised, *var. unspecified* (*Vick*-like); and Mazique Incised, *vars. Bruly* and *Mazique*. The Isle Bonne site also supported a major Coles Creek occupation, but the only evidence for this in the excavations was a single sherd of Pontchartrain Check Stamped, *var. Pontchartrain*, in level 1 of unit 4 (Beavers 1982b; DeMarcay n.d.). Shell tempered sherds in the upper levels of several excavation units also attests to an even later occupation (Gagliano et al. 1979:Appendix A).

Another important Baytown period component was found in the lower levels of the excavations at the Pump Canal site (16SC27) at the western end of Lake Cataouache. These excavations revealed a deeply buried later Baytown period component which was radiocarbon dated to ca. A.D. 400-600 (Jones et al. 1994:313-319, Table 42). Important markers of the earliest occupation at the Pump Canal site included Larto Red, *vars. Silver Creek* and *unspecified* (but like *Larto*); Coles Creek Incised, *var. unspecified* (but like *Phillips*); Evansville Punctated, *vars. Duck Lake* and *Rhinehart*; very rarely French Fork Incised, *var. unspecified*; and equally rarely Mazique Incised, *var. unspecified*. Important diagnostic modes were the use of the so-called "six mile" treatment (also known as Evansville Punctated, *var. Amite*), "Troyville thick" rims, the "Onion Lake" rim mode, and beveled rims (Giardino 1993; Kidder 1994a).

Elsewhere in the coastal zone, evidence for Baytown period occupations is scarce. Surface collections from the Gheens Crevasse on the east side of Bayou Lafourche yielded tenuous evidence of late Baytown or early Coles Creek components (Hunter et al. 1988; Pearson et al. 1989). Sites of this age were identified by the presence of French Fork Incised

varieties (especially *var. Brashear*), Coles Creek Incised, *vars. Coles Creek, Hunt*, and *Stoner*, and Pontchartrain Check Stamped (Pearson et al. 1989:174). These sites lack Larto Red, Woodville Zoned Red, and the distinctive "six mile" rim treatment; evidently these are late Baytown occupations.

Phillips designated Whitehall as the Baytown period archeological phase in the Louisiana coastal zone. However, Kidder (1994a) has argued that Whitehall is not an appropriate phase for this region. Whitehall is better represented in the areas north of the Barataria Basin (Weinstein 1974). Furthermore, Kidder (1994a) argues that the Baytown period in the Barataria Basin, and probably all of coastal Louisiana, may be subdivided temporally into early and late phases. Although, as Gibson (1984) has noted, coastal Louisiana is distinctive in many ways, the basic culture history does not seem to depart radically from that found in the rest of the Lower Mississippi Valley. A two-part chronology on the coast would be in keeping with existing chronologies farther up the river, and would seem to fit the data better than having one overreaching and therefore amorphous temporal unit (Kidder 1994a:405). The earliest phase of the Baytown period in coastal Louisiana has been termed the Grand Bayou phase, and the later phase is the Des Allemands phase (Giardino 1993; Kidder 1994a).

The Grand Bayou phase is marked by the presence of the so-called terminal Marksville ceramic tradition, characterized elsewhere by local analogs to Marksville Incised *vars. Anglim* and *Vick*, and Marksville Stamped, *var. Bayou Rouge*. Larto Red pottery is evident, as are late variants of Churupa Punctated, especially something similar to *var. Watson*. Rim modes include characteristic early Baytown thickened rim modes and rim and lip notching. Plain pottery consists of relatively thick, coarse grit-grog tempered plain pottery. This later phenomenon, the use of very thick coarse plain ware, may be diagnostic of the Grand Bayou phase, at least along Grand Bayou. Grand Bayou phase components have been identified at Bruly St. Martin, Shell Beach, Gibson Mounds, 16SC42, 16SC43, and 16SC45. The earliest occupation at Isle Bonne may date to this time period, but it is likely that the bulk of the pottery comes from the later Des Allemands phase component.

Des Allemands phase components can be identified in stratigraphically unmixed contexts, but are difficult to separate from the early Coles Creek Bayou Cutler phase, largely because definitive criteria are harder to isolate (Giardino 1993). The Marksville Incised and Stamped traditions are no longer evident, but red filming continues. The addition of Woodville Zoned Red may be associated with early Weeden Island influences extending westward along the Gulf Coast (Belmont and Williams 1981:32-34). Early variants of French Fork Incised increase in frequency, although the specific relationship between varieties is unknown. The so-called French Fork lug appears for the first time, and together with the decorated varieties, indicates strong Weeden Island-like influences or even contacts. New types, such a Evansville Punctated and Hollyknowe Pinched (which is rare), also make their appearance at this time. Especially notable in this regard is the use of linear punctation (Evansville Punctated, *var. Duck Lake*), and punctations in lines, and as a mode below the rim. The use of the "six mile" treatment may be one of the best and most consistent diagnostic hallmarks of the Des Allemands phase, although it certainly is continued into the Coles Creek period. It is possible that an early form of Pontchartrain Check Stamped might be found, although this type seems to be very rare and is only found in surface collections or mixed stratigraphic components. A characteristic of the Des Allemands phase is single- and possibly double-lined examples of Coles Creek Incised, often with incisions on thickened rims. Although these variants begin at this time, they carry on into the Coles Creek period and are not of and by themselves especially diagnostic. Early Mazique Incised variants are found for the first time, and are especially notable for the initial appearance of Mazique Incised, *var. Bruly*. Thick, coarse grit-grog tempered plainwares dominate collections, but sand added to the paste achieves a brief period of popularity. The Isle Bonne site is essentially the type site for the Des Allemands phase.

Grand Bayou and Des Allemands should be considered phases of the so-called "Coastal Troyville" culture. Grand Bayou demonstrates ceramic affinities to phases up the Mississippi River, especially the Troyville culture phases at Greenhouse and in the Tensas Basin. Grand Bayou is not the same culturally as the Troyville peoples living in the Mississippi River Valley proper, however. Absent on the coast are the distinctive site plans, site hierarchies, burial mounds and mortuary patterns, and total ceramic repertoire. This "Coastal Troyville" culture seems to represent a hunting and gathering society widely distributed across the habitable parts of the coastal zone (Giardino 1993). Although farther north and to the east contemporary groups constructed mounds and earthen platforms (Blitz and Mann 1993; Kidder and Wells 1992), there are not certain data to substantiate this practice in the Delta.

In contrast with the Grand Bayou phase, the Des Allemands phase peoples seem to have a more eastern orientation (Giardino 1993). It is at this time that we see the beginnings of what appears to be relatively intensive interaction with Weeden Island or Weeden Island-related groups along the eastern gulf Coast (Belmont 1967; Belmont and Williams 1981). Although these external connections are notable, it is important that we encourage a view that the peoples of the Louisiana coastal zones were developing their own unique adaptations to the delta environment of the Mississippi River. Des Allemands phase ceramics mirror a broad trend in Lower Valley prehistory marking the origins of later Coles Creek patterns. This is especially true of the increasingly frequent use of incised lines both parallel and oblique to the rim. Check stamping may have its beginnings at this time in the Louisiana coastal zone, although the concept has earlier roots to the east and does not become prevalent until later (Brown 1982). Although pottery styles change in the Delta, little else seems to differ when compared to earlier occupations.

Because the data become more dense at this time, we can note with some certainty that the coastal pattern of intensive exploitation of fish, deer, and muskrat is in place by the end of the Baytown period. Shellfish harvesting or exploitation continues, but little evidence for settlement differentiation exists at present. Although others have hypothesized a pattern of seasonal movement between villages and collecting stations or camps (Weinstein and Kelley 1992), we have no firm evidence for this behavior. The data recovered from the Pump Canal site hint at a series of relatively brief occupations, and the *Rangia* seasonality data indicate a late spring or early summer occupation (Jones et al. 1994). Perhaps at this time populations living in the Barataria Basin were making seasonal trips to the distal ends of distributary courses to hunt, fish, and exploit the *Rangia* beds in the nearby brackish water environments. If this was a part of a seasonal round that involved living in larger, more established villages, such sites have not yet been found. Possibly Bruly St. Martin, located well into the interior of the Barataria Basin, might qualify for such a village location.

Given our limited data, it is difficult to establish any socio-political patterning with confidence. It appears that the Des Allemands phase peoples were egalitarian hunter-gatherers. Research at the Gibson Mounds indicates that part of Mound C may have been built at this time, but the data are too equivocal to make a firm determination at present (Weinstein et al. 1978). Similarly, we cannot be certain if any artificial mounds were constructed at the Isle Bonne site during the Baytown period. Otherwise, no mounds appear to have been built at this time, and no strong site hierarchy can be identified. Site differentiation may exist, but what evidence there is indicates that site function plays the determining role in the size and nature of the site occupation.

The Coles Creek Period

The Coles Creek period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of

"full-blown" Mississippian culture in the northern part of the Valley (Phillips 1970:18). Although it appears to represent a population zenith in the eastern coastal zone, many sites tentatively classified as Coles Creek may actually be from the Baytown period (Wiseman et al. 1979:3/5).

Coles Creek culture in the central Lower Mississippi Valley is characterized by small ceremonial centers with mounds. These were surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. A distinctive coastal variant of Coles Creek culture emerged at the same time, and no doubt there was a dynamic relation among and between Coles Creek period populations on the coast and in the interior (Brown 1984:95; Jeter and Williams 1989).

Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those found at earlier Marksville period sites. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings (Ford 1951; Williams and Brain 1983). In contrast, Marksville peoples generally built conical burial mounds (Neuman 1984:167).

The advent of the Coles Creek period in the Louisiana coastal zone is marked by changes in ceramic frequencies and, to a lesser extent, by the appearance of new types or varieties and the disappearance of others. More fundamental patterns of economic and social behavior also change, but at a seemingly slower rate. Unlike previous periods, Coles Creek is well known, at least in terms of the ceramics. In the Lower Mississippi Valley, Coles Creek has been divided into early, middle, and late phases (Phillips 1970; Williams and Brain 1983). More recently, however, a fourth, usually "transitional" Coles Creek (or in some cases early Plaquemine) phase has been added (Brown 1985a; Kidder 1994b; Weinstein 1987).

The archeological record of south Louisiana is sufficiently detailed so that the Coles Creek period is divided both into temporal phases and spatially discrete geographic areas. In the coastal zone, there are at least three geographic areas with two Coles Creek phases each. Only recently has a third, late Coles Creek, phase been proposed for these geographic areas (Brown 1984; Weinstein 1987). In the western Chenier Plain, the three phases are (from earliest to latest), Welsh, Jeff Davis, and Holly Beach (Weinstein 1987). The Coles Creek sequence in the central coastal area has been defined largely by Ian Brown based on research conducted on and around Avery Island. The central area, or Petit Anse, sequence consists of three phases, White Lake, Morgan, and Three Bayou (Brown 1981, 1982, 1984, 1988; Brown et al. 1979; Fuller and Fuller 1987; Weinstein 1987). In the eastern portion of the coastal zone, from roughly the Atchafalaya eastward to the St. Bernard marshes, Coles Creek is defined to include the Bayou Cutler, Bayou Ramos, and St. Gabriel phases (Weinstein 1987).

The Bayou Cutler phase was initially described by Kniffen (1936) as the Bayou Cutler complex, named for the site type in the Barataria Basin (Gagliano et al. 1979). Ford and Quimby (1945:18), and later McIntire (1958a:77) recognized Bayou Cutler "type" ceramics from the eastern coastal area and correlated them with Troyville-Coles Creek period ceramics from the Mississippi Valley. Phillips (1970:920-922) preferred to place Bayou Cutler as a phase "mostly if not entirely **within** the Coles Creek period" (1970:921, emphasis in original). Based on Kniffen's initial formulation, and using McIntire's data, Phillips defined Bayou Cutler as containing the types Pontchartrain Check Stamped, Coles Creek Incised, French Fork Incised, Mazique Incised, Chevalier Stamped, Beldeau Incised, Chase Incised, Rhinehart Punctated, and "Coles Creek rims" (1970:921). Phillips further "made a reasonably serious effort to subdivide the phase" (1970:922), but he found "the concept of Bayou Cutler is frail enough without overloading it with such refinements" (1970:922). Like Whitehall, then, Bayou Cutler stood as the only phase of the Coles Creek culture in coastal Louisiana, encompassing both great temporal depth and significant spatial dimension.

In the late 1970s, a new phase, encompassing the later half of the existing Bayou Cutler phase, was created to reduce its temporal extent (Weinstein et al. 1978:22-23). The new phase, named Bayou Ramos, was the equivalent of Bayou Cutler "in the latter half of the Coles Creek period." Bayou Cutler was retained for the early half of the Coles Creek period, and was still "too broad geographically" (Weinstein et al. 1978:23). Bayou Ramos suffered this same problem. According to this new definition, Bayou Cutler could be identified by the presence of Coles Creek Incised, *vars. Coles Creek, Campbellesville, Chase,* and *Wade*, Mazique Incised, *var. Mazique*, Chevalier Stamped, *var. Chevalier*, Evansville Punctated, *var. Rhinehart*, and Pontchartrain Check Stamped, *var. Pontchartrain*. French Fork Incised was also included in this definition, although varieties were not specified; most though were thought to date to the early Coles Creek period (Weinstein et al. 1978:23).

The Bayou Ramos phase ceramics included Avoyelles Punctated, *var. Avoyelles*, Beldeau Incised, *var. Beldeau*, Coles Creek Incised, *var. Mott*, Mazique Incised, *var. Kings Point*, and Pontchartrain Check Stamped, *var. Pontchartrain*. This last variety was thought to decline in frequency during the late Coles Creek period (Weinstein et al. 1978:23, 99-100), a fact not substantiated by later research on the Louisiana coast (Brown 1982:31-37). "Certain varieties" of French Fork Incised were found at this time, but evidently in declining frequencies and with lesser elaboration (Weinstein et al. 1978:23).

The Bayou Ramos phase was defined partially on the basis of excavations at the Bayou Ramos I site (16SMY133), which yielded radiocarbon dates of 970 ± 50 and 1215 ± 70 B.P. (Weinstein et al. 1978:91). The two dates were stratigraphically reversed, with the earlier date coming from a higher level. The Bayou Ramos I site excavations also yielded very small decorated pottery samples, which further complicates the picture of later Coles Creek prehistory in the coastal zone. Subsequent to the definition of the Bayou Ramos phase, excavations at the Morgan site (16VM9) in the Petit Anse region yielded a large number of dates for the later Coles Creek period in the central coastal area, and allowed for the formulation of a separate culture historical sequence in that region (Brown 1984, 1988; Fuller and Fuller 1987). The Morgan site data helped to pin down the ambiguous Bayou Ramos chronology, and, more critically, strengthened the definition of Bayou Ramos by restricting its spatial extent.

The settlement patterns of the Coles Creek period are not well understood at this time. There is a general sense that populations were organized into a relatively loosely arranged hierarchy of site types. The best defined model comes from the Terrebonne marsh area west of the Barataria Basin. Here, Weinstein and Kelley (1992) hypothesize a pattern of major mound sites, satellite villages, and seasonal camps or shellfishing stations. The mound sites consisted of one or more earthen mounds, presumably supporting the structures of elite chiefs and/or priests. They suggested that the Gibson Mounds may have served as the major Coles Creek period mound center in this area, although the precise chronology of all the mounds is as yet undetermined. Most, if not all of Mound C at Gibson Mounds appears to have been constructed during the Bayou Cutler phase. Smaller village sites are found along stable levee segments, usually at the junction of one or more tributaries. These settlements may be year-round occupations, although Weinstein and Kelley (1992) subscribe to the notion that part of the subsistence cycle involved seasonal movement into the marshes and towards the coast. These seasonal movements may have been oriented towards exploiting shellfish and other coastal or marsh resources. There are no data to support their hypothesized seasonal pattern of movement, however.

In the Petit Anse region of central coastal Louisiana, excavations at the Morgan site demonstrate unequivocally that mound building was taking place during the later part of the Coles Creek period. Radiocarbon dates from Mound 1 show that construction occurred over a relatively brief period of time (Brown 1988; Fuller and Fuller 1987). Mound 1 supported a

circular structure with a central hearth. Numerous post molds and overlapping hearth remains indicate that this building was rebuilt and reused over a period of time (Fuller and Fuller 1987). Data from the Petit Anse region as a whole indicates that Coles Creek period sites were widely distributed across all landforms, and were especially common in the marshes (Brown 1984, 1988). Excavations at the Onion Lake site (16VM17) revealed a possible circular house feature in a *Rangia* shell midden feature (Brown 1984, 1988; Brown et al. 1979:116-119). Ian Brown has noted a number of these features in the Petit Anse region and elsewhere on the coast, and he suggests that they may be a common form of dwelling at sites situated in the marshes.

In the Barataria Basin, the archeological data are not adequate to fully address the nature of settlement and social organization. Excavations at the Fleming site (16JE36) indicates that Coles Creek period occupations comprise a considerable portion of the vertical extent of this site (Holley and DeMarcay 1977). Coles Creek deposits underlay later Mississippi period components, but it is not clear if the mound was constructed at this time (Holley and DeMarcay 1977; Manuel 1984). A radiocarbon date (UGa-1084; 1095 ± 60 B.P.) from level 10 of Unit 7 at the Fleming site yielded a date of cal. A.D. 964, with a calibrated age range of A.D. 792-1024 (at two standard deviations). A maize cob was recovered from a similar level in Unit 12, which was only a couple of meters away from Unit 7 (Holley and DeMarcay 1977). Along with the Bayou Villas and Isle Bonne sites, Fleming makes up the important "Barataria complex" occupations (Gagliano et al. 1979; Holley and DeMarcay 1977). This locality is presumed to be the major center for Coles Creek and Mississippi period settlement in the lower part of the Barataria Basin. All three of these sites supported earthen or shell mounds, although none of the construction stages can be solely assigned to the Coles Creek period (Gagliano et al. 1979).

There were major Coles Creek occupations at both the Sims (16SC2) and Bowie (16LF17) sites, and numerous Coles Creek period occupations are found in the interdistributary basin between bayous Lafourche and Barataria (Hunter et al. 1988; Pearson et al. 1989). The density of Coles Creek occupation in this area is remarkable and suggests that this region was one of the central loci of activity during this period. Sims and Bowie are presumed to be major villages dating to the Coles Creek period (Davis and Giardino 1981; Jackson 1977), but little evidence exists to confirm this hypothesis. Numerous Coles Creek occupations are found on Bayou Barataria and its distributaries south of the confluence with Bayou Villas.

Based on the settlement data from surrounding areas, combined with the artifact assemblage, richness, and diversity, the Pump Canal site can be hypothesized to be an important village occupation during the Coles Creek period (Giardino 1993; Jones et al. 1994). The site may not have been occupied year-round, but it clearly supported a relatively large occupation. It may have been an important locality serving as a "base camp" for exploiting the resources of the surrounding marshes and lakes. As the Bayou Cypriere Longue system deteriorated over time, site function appears to have changed, such that during the later Coles Creek period, the site was abandoned or only sporadically occupied. During subsequent occupations, the site seems to have served as a temporary or perhaps seasonal camp site.

The Bayou Des Familles area appears not to have witnessed any notable Coles Creek period occupation (Beavers 1982b), although there appears to have been a Coles Creek period occupation at the Coquilles site (16JE37). The data for this interpretation are ambiguous (Giardino n.d.), but are supported by radiocarbon dates from the excavations conducted by the National Park Service (Table 2). The absence of Coles Creek occupations on Bayou Des Familles may be explainable in light of the cultural geography of the region. Coles Creek populations seem to have been heavily dependent on marsh resources, especially fish and muskrat (Davis 1987; Jones et al. 1994). The exploitation patterns of these people tended to focus on relatively newly emerged channel segments, or on channels which provided immedi-

ate access to marsh resources via tributary systems. Bayou Des Familles, although a possible candidate for such an occupation, may have been too far into the interior, and may have been, relatively speaking, too far from the marsh resources. Coles Creek peoples living in the coastal zone were evidently not depending on cultivated foods as an important part of their diet (Fritz and Kidder 1993; Wetterstrom 1987), and thus, the Bayou Des Familles channel may not have been important to them.

An alternative interpretation is that the archeological surveys of Bayou Des Familles have failed to identify the Coles Creek period occupations because they have focused on the immediate bank of Bayou Des Familles. According to Betsy Swanson (personal communication 1995), Coles Creek and earlier occupations probably existed in the region but are either located away from the modern bayou, or, if they were located on the edge of the bayou they have been eroded by lateral migration of the channel. While it is plausible that some sites have been missed by archeological survey, the Bayou Des Familles channel is one of the most intensively studied levee segments in Louisiana. Surveys which covered a transect perpendicular to the levee have not revealed prehistoric occupation on the backslope of the levee (Kidder 1995:75-83), and there is no evidence to suggest significant channel shifting in the Coles Creek period or even earlier. What we see is likely to be a reflection of a real pattern whereby occupation of the Bayou Des Familles channel was minimal during the Coles Creek period due to its not being a favored habitat for these people.

The transition from the Coles Creek to Plaquemine culture has never been well defined in the Lower Mississippi Valley. In most culture historical reconstruction, this event (or these events) took place abruptly at ca. A.D. 1000, and is assumed to be causally related to the diffusion of Mississippian culture traits from farther north or east (Phillips 1970; Williams and Brain 1983). Recent work suggests a far more complex picture, with a longer period of transition occurring over the period ca. A.D. 1000-1200 (Kidder 1994a; Weinstein 1987). The emergence of Plaquemine came not from an intrusion of Mississippian elements, but rather from a slow *in situ* series of changes in local cultures across the Mississippi Valley and the coastal zone. In recognition of the gradual evolutionary pattern witnessed in the region, archeologists have adopted the term Transitional Coles Creek/Plaquemine to identify this interval. In the coastal zone, the best discussion of this period is by Weinstein in his 1987 synthesis of the late prehistory of the delta and coastal zone.

In the eastern section of the coastal zone, from the Atchafalaya eastward, Weinstein (1987) observed that the Transitional Coles Creek/Plaquemine occupations were best defined as a extension of the St. Gabriel phase, first defined by Brown (1985b) based on excavations at the type site (16IV128) (Woodiel 1980). Excavations in the premound surface at St. Gabriel revealed a circular wall trench structure with ceramics and other material remains in good association. The pottery from this occupation surface included Addis Plain, Coles Creek Incised, *vars. Mott* and *Hardy*, Evansville Punctated, *var. Rhinehart*, Mazique Incised, *var. Manchac*, Plaquemine Brushed, *var. Plaquemine*, and Pontchartrain Check Stamped. Radiocarbon dates from this structure place the occupation between ca. cal. A.D. 950-1250 (Kidder 1992:22-23; Woodiel 1980). Additional St. Gabriel occupations were noted at the nearby Bayou Goula (16IV11) and Medora (16WBR1) sites (Weinstein 1987:90), and also at the Kleinpeter site near Baton Rouge (D. Jones et al. 1993).

In the coastal zone, St. Gabriel or contemporary occupations are found at Mulatto Bayou (16SB12), Thibodaux (16AS35), and Bergeron School (16LF33) (Weinstein 1987:93). Absent in the eastern delta area are varieties such as *Mott* and *Plaquemine*. At Thibodaux, a stratified excavation unit yielded a ceramic assemblage comprised of Addis Plain pottery with Mazique Incised, *var. Manchac* and Plaquemine Brushed, *var. Plaquemine* associated with a *Rangia* shell lens. A radiocarbon date from this shell layer came out at cal. A.D. 1026 (Weinstein 1987:93; Weinstein et al. 1978:43).

The available data from surrounding areas suggest that the Transitional Coles Creek/Plaquemine occupation of the Barataria Basin was largely unchanged from earlier Coles Creek times. The data from this region indicate that the major settlements continue to be located along Bayou Barataria or farther inland on the distributary channels of Bayou Lafourche or at the edges of large crevasse splays. The largest site of this time appears to be the Bowie site. Most of the pottery from the middle and upper stratigraphic contexts here dates to this interval (Jackson 1977). A contemporary component is also found at the Sims site. The concentration of sites at the junction of Bayous Barataria and Villas is the best candidate for regional center in the Barataria Basin, but the precise chronology of these sites is still unknown. Data presented by Holley and DeMarcay (1977) leads to the suspicion that a considerable part of the Fleming site deposits accumulated at this time.

Although Brown et al. (1979) note that important changes in settlement (and presumably subsistence) are initiated during Transitional Coles Creek/Plaquemine times in the Petit Anse region, no such evidence is found in regions to the east. In the Terrebonne marshes, the settlement pattern evidently continues unbroken from earlier times (Weinstein and Kelley 1992:353-355). The quantity and number of mounds constructed appear to increase through time, but how many date to this interval cannot be determined at present. A clear mound center and subsidiary village hierarchy developed during the Coles Creek period and probably continues into these transitional times. The trend in the coastal zone is one of gradual and steady evolution within the region. External influences may be present, but they do not appear to be notable in terms of the process of culture change. The origins of the Mississippi period cultures of the coastal zone seem to be wholly local. Later events, though, seem to suggest that this region witnessed a significant influence from Mississippian groups farther eastward along the coast.

The Mississippi Period

The beginning of the Mississippi period is marked by the appearance of emergent Mississippian culture in the northern part of the Lower Mississippi Valley and throughout much of the interior Southeast. Mississippian culture characteristics, such as shell tempering and the use of maize agriculture, did not penetrate into much of the central Lower Valley. Plaquemine culture is the term used to denote the indigenous late prehistoric populations of most of the Lower Mississippi Valley and adjacent coastal regions. Archeological evidence suggests that Plaquemine culture emerged from a Coles Creek base and was later influenced by Mississippian intrusions from farther up the Mississippi River Valley. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to European contact (Neuman 1984:258-259).

In the western coastal zone, the culture history is complex and not well understood. In the far western Chenier plain, Weinstein (1987:93) has defined the Bayou Chene phase to encompass the entire Mississippi period occupation of the region. Bayou Chene is described as a "somewhat nebulous blend of Plaquemine and localized traditions" (Weinstein 1987:93). Ceramics dating to this time "show an increase in sandy-paste and sand-tempered types and varieties, reminiscent of east Texas wares... along with a spattering of typical Plaquemine and Caddoan sherds" (Weinstein 1987:93). Weinstein does not consider Bayou Chene to belong in the Plaquemine cultural tradition. During the very late prehistoric and protohistoric periods, the "Atakapa culture began to consolidate its identity as something distinct from Plaquemine" (Weinstein 1987:98).

In the Petit Anse region of south-central Louisiana, the culture history is more typical of the Lower Mississippi Valley sequences farther up the river. A sizable Plaquemine occu-

pation is found in the region, especially on the salt domes and in high, well drained areas (Brown 1982; Brown et al. 1979:174-181). The Burk Hill phase in the Petite Anse is marked by the ceramic diagnostics Anna Incised, Carter Engraved, Leland Incised, Maddox Engraved, Mazique Incised, and Plaquemine Brushed. Brown et al. (1979:174) emphasize the "drastic changes" in settlement organization during the Plaquemine occupation in the region. The major difference noted at this time is a marked decrease in the emphasis on settlements in the marsh area and the concentration of sites on and around the salt domes in the region. The cause of this settlement shift is related to a hypothesized emphasis on agricultural production beginning around A.D. 1000 (Brown et al. 1979:180).

The latest prehistoric occupation in the Petit Anse appears to represent a direct influx in Mississippian peoples from farther north in the Mississippi Valley and was oriented almost wholly around the exploitation of salt resources on Avery Island (Brown 1980). With the exception of the Salt Mine Valley site (16IB23) on Avery Island, "Mississippian culture is hardly represented in the region" (Brown et al. 1979:180). Ceramics from the Petit Anse phase are shell tempered and manifest decorative patterns and styles found farther north in the central part of the lower Mississippi Valley.

The late prehistoric culture history and chronology of the eastern portion of the Louisiana coastal zone is not well understood at present (Jeter and Williams 1989:191). The data indicate that local Plaquemine populations in the region developed out of the Transitional Coles Creek/Plaquemine beginning at roughly A.D. 1200 (Jeter and Williams 1989:191-195; Weinstein 1987). At roughly the same time, however, Mississippian ceramics (and possibly peoples) identified with the Pensacola variant of Mississippian culture (Knight 1984; Stowe 1985), enter into the area from the east, presumably via the Gulf Coast. Sites in the eastern coastal zone with shell tempered pottery in large quantities are identified with the Bayou Petre phase, while late prehistoric sites in the area without shell tempered pottery, and which show evidence of more Lower Valley ceramic characteristics, are identified with the so-called Delta-Natchezan phase. Although these Mississippian ceramics tend to be found primarily in the easternmost part of the region, Mississippian Bayou Petre phase pottery is not wholly confined to this region (McIntire 1958a). To further complicate the picture, there is increasing evidence that the late prehistoric populations in the Barataria Basin integrated some of the Mississippian designs and styles into the local ceramic repertoire (Davis and Giardino 1981).

Kniffen was first to recognize the complexity of the late prehistoric period. He established his Bayou Petre complex to account for the presence of shell tempering, and vessels with handles and/or nodes or lugs on the rim (1936:412). Kniffen also noted the absence of check stamping and the lack of decoration on vessel rims. McIntire (1958) also acknowledged the existence of Bayou Petre "complex" sites, although he took the chronology further by identifying Plaquemine sites, as well as those which yielded Fort Walton and Moundville pottery types (1958). McIntire did not distinguish any temporal variation in the presence of shell tempered pottery from the eastern Gulf Coast region, and lumped all of these sites into the Plaquemine "period" (1958:81-88).

It was Phillips who first established the phase chronology for the Louisiana Coastal zone. Based mostly on McIntire's data, he set up two sequential phases, Bayou Petre and Delta Natchezan, to encompass the Mississippi period on the coast. A third phase, Medora, was established for the Plaquemine occupation of the southern Lower Valley (Phillips 1970:949-953). Although some Medora phase sites have been identified in the coastal zone as far south as the Gibson site and as far west as Avery Island (16IB23), Phillips largely restricted the distribution of this phase to the non-coastal part of the southern Mississippi River Valley. He further excluded Plaquemine culture from the eastern coastal zone by establishing the Bayou Petre phase (reconstituted from Kniffen's original Bayou Petre complex), which he argued was "not a phase of Plaquemine culture" (Phillips 1970:950). Bayou Petre was essen-

tially defined to encompass all sites with shell tempered wares assumed to be of an eastern (Fort Walton, Pensacola, or Moundville) origin (McIntire 1958; Phillips 1970). Delta Natchezan was similarly defined to include those sites which manifest Natchez-like (i.e., Plaquemine) pottery (1970:949). Phillips was not especially comfortable with the validity of either phase, noting that the Delta Natchezan phase was "very tentative, if not entirely hypothetical" (1970:949). Phillips had considerable difficulty distinguishing between Bayou Petre and Delta Natchezan sites, and concluded that there was a "zone of contact in which Delta Natchezan and Bayou Petre sites occur together" (1970:953). Bayou Petre sites were largely confined to the eastern portion of the delta, especially in the St. Bernard marshes east of the modern channel of the Mississippi River. The zone of contact noted by Phillips was roughly marked by the line of Bayou Barataria (1970:953). More recent analysis of the prehistory of the eastern coastal zone suggests that there is an important Plaquemine occupation in the Barataria Basin and westward. The situation east of the modern course of the Mississippi River is less well known, but Plaquemine, as it is traditionally known, may not have spread into the region. Weinstein (1987) places the Delta Natchezan phase at the end of the prehistoric sequence in the region, with Bayou Petre beginning earlier and continuing through to the historic period.

The early part of the Mississippi period in the region is marked by the Medora phase in the interior and the Barataria phase along the eastern coastal zone. The Plaquemine occupation of the Barataria Basin and adjacent parts of the coastal zone is designated the Barataria phase. This phase was defined by Holley and DeMarcay based on amateur excavations conducted at the Fleming site (Holley and DeMarcay 1977; Manuel 1984). Due to poor recording during the excavations, the stratigraphic relationships among the components is uncertain, but the site clearly manifests an important Plaquemine occupation. Fleming consists of at least one earth and shell mound, and a shell midden (Holley and DeMarcay 1977:4; Weinstein 1987:96). The Fleming site is one of three apparently contemporary occupations at the junction of Bayou Barataria and Bayou Villas. The Isle Bonne and Bayou Villas sites also consisted of earth and shell middens and mounds (Gagliano et al. 1975:24, 58, 1979; Holley and DeMarcay 1977; Weinstein 1987:96). As noted by Weinstein (1987:96), "this large mound complex forms the hub of the Barataria phase."

The Barataria phase is differentiated from the contemporary Medora phase of the Mississippi Valley by the absence of Plaquemine Brushed pottery and by the extensive use of so-called Southern Cult motifs associated with typically Lower Valley pottery such as Anna Incised and L'Eau Noire Incised (Holley and DeMarcay 1977; Weinstein 1987:96). The Barataria phase ceramics, however, are otherwise Plaquemine in composition. Major types and varieties associated with this phase include Anna Incised, L'Eau Noire Incised, *vars. L'Eau Noire* and *Bayou Bourbe*, Carter Engraved, Maddox Engraved, and Mazique Incised, *var. Manchac* (Holley and DeMarcay 1977:14-18).

The Fleming site excavations also uncovered a relatively large amount of shell tempered pottery which appears to be stratigraphically later than the initial appearance of Plaquemine ceramics (Holley and DeMarcay 1977). These shell tempered sherds, however, evidently are partially coeval with some of the Plaquemine materials at the site, and it seems that some degree of overlap occurred during the span of occupation. The excavations at Fleming and other late prehistoric sites in the region demonstrate the difficulty in identifying Plaquemine and Mississippian occupations in the Barataria Basin. At the Sims site, for example, shell tempering occurs initially in association with Plaquemine types and varieties, but soon dominates the latest assemblages (Davis 1981; Davis and Giardino 1981; Giardino 1985).

The traditional culture historical model assumes that the Plaquemine Barataria phase is distinct from the Mississippian Bayou Petre phase (Weinstein 1987). An alternative view, however, derived from the examination of the ceramics from the Barataria Basin, suggests that

Bayou Petre is not a distinct phase but rather represents the intrusion of shell tempered ceramics from the east (Phillips 1970). In this model, the appearance of shell tempering only indicates the movement of ceramic ideas, not peoples, into the region. A possible indication of this notion is seen in the manufacture of a pottery type identified as Buras Incised. This type consists of "Moundville Incised decoration on typical Addis paste" (Weinstein 1987:98). The integration of shell-tempering and non-local styles into the local ceramic repertoire marks the evolution of local Mississippi period populations who were responding to both internal and external events. The expansion of the Pensacola variant of Mississippian westward into the deltaic portion of the Mississippi Valley is not especially surprising in light of the expansion of Mississippian ideas and traits across the Gulf Coast (Blitz and Mann 1993; Knight 1984). Furthermore, given the proximity of the St. Bernard marshes to the Mississippi Gulf Coast, it is no surprise that the bulk of the Mississippian ceramics are found here.

With the decline of Moundville and its influences across the Gulf Coast in the later part of the fifteenth century, the deltaic part of the coastal zone saw once again a renewed emphasis on indigenous styles in ceramics. The so-called Delta Natchezan phase represents the final late prehistoric phase in the region. Ceramics of this phase show a strong continuity from the Barataria/Bayou Petre phase occupations in the region, with the addition of pan-Lower Vailey varieties such as Fatherland Incised, *vars. Fatherland* and *Bayou Goula*. Shell tempering continues as an important, but not unique, characteristic in the ceramics from the region (Giardino 1985). The Thibodaux site in the Terrebonne marsh area contains a representative Delta Natchezan occupation, with ceramics including Addis Plain, Fatherland Incised, *vars. Fatherland* and *Bayou Goula,* Maddox Engraved, *var. Emerald*, and Plaquemine Brushed, *var. Plaquemine*. Two radiocarbon dates from the Delta Natchezan levels at Thibodaux indicate an occupation in the fifteenth century with an age range at two standard deviations of cal. A.D. 1294-1525 (Weinstein 1987:101; Weinstein et al. 1978:44). These radiocarbon dates suggest that Thibodaux is contemporary with Bayou Petre sites in the eastern delta area.

The largest excavated late prehistoric site in the deltaic portion of the coastal zone is the Sims site (Davis 1981; Davis and Giardino 1981; Giardino 1985). Excavations in areas 1 and 3 at Sims revealed Mississippi period deposits attributable to the Bayou Petre and Delta Natchezan phases. Charcoal from the hearth at the base of Mound B and associated with both shell tempered sherds (including D'Olive Incised, Leland Incised, Moundville Incised, and Mound Place Incised) and "clay" tempered sherds (Buras Incised, Leland Incised, Coleman Incised) yielded a date of 490 $\pm$ 180 B.P. (cal. A.D. 1427). Excavations in area 3 at Sims revealed a late Mississippi period component thought to be related to the terminal occupation at the Bayou Goula site and possibly dating to the protohistoric or early historic period (Giardino 1985).

The Bowie site also contained a minor Bayou Petre or Delta Natchezan phase occupation (Jackson 1977). Analysis of the remains from the site was undertaken prior to the recognition of the Barataria phase, but Jackson noted that the site also seemed to support an important Plaquemine component. One of the most notable finds at this site was the recovery of part of a rectangular structure constructed with wall trenches but no supporting posts (Jackson 1977). During this late prehistoric period, archeological sites are found across much of the marsh and levee lands of the eastern coastal zone. Collections from the Buras Mounds (16PL13) and from the Bayou Ronquille site (16PL7) demonstrate that there were important mound occupations located near the modern day coast and associated with recent distributary channel courses (see Kniffen 1936; Weinstein 1987).

The Bayou Des Familles channel appears to witness an increase in occupation frequency during the late prehistoric and into the historic periods (Beavers 1982b; Franks and Yakubik 1990; Fuller 1991; Kidder 1995; Swanson 1991; Yakubik 1989). Excavations at the Bayou Des Familles site (16JE218) demonstrate the presence of small, probably seasonal

occupations on the levees of the bayou. The site covers an area of roughly 650 m^2, and consists of a thin lens of *Rangia* shell averaging roughly 10-15 cm (Kidder 1995). Ten radiocarbon dates from the Bayou Des Familles site suggest an occupation in the early to mid-fifteenth century (Kidder 1995:Table 37, Figure 92). Ceramics from this site are largely undecorated, but include one sherd of Maddox Engraved and a small quantity of Buras Incised, *var. Oyster Road* (Wells et al. 1995). Floral data from the site infers the cultivation of maize, and several lines of evidence have been used to argue for a spring or early summer occupation (Kidder 1995).

The Bayou Des Familles site provides an important datum for exploring the cultural relationships among and between peoples living in the Barataria Basin during the Mississippi period. Only two sherds from the Bayou Des Familles site were shell tempered, and the overwhelming bulk could be attributed to local late prehistoric variants of Baytown Plain. All the decorated sherds were executed on a clay or grit-grog paste. Farther west at the Sims site, in what appears to be a wholly contemporary context beneath Mound B, the same kinds of decorated sherds are found, but are executed on both grit-grog and shell tempered pastes. The Fleming site seems to witness a similar situation. On the north shore of Lake Pontchartrain, however, excavations at the Johnson site (16ST68) revealed a contemporary component with only shell tempered pottery (Shannon 1989). These data point to the increasingly obvious fact that normative assumptions about the behavior of traits such as shell tempering are not alone sufficient to help us to sort out the highly complex cultural dynamics of the eastern coastal zone in the late prehistoric period.

Mississippi period sherds at a number of small shell middens along Bayou Des Familles (Beavers 1982b) suggest either larger populations were exploiting the region, or that they were visiting more frequently. None of the Mississippi period sites are large, nor do they show evidence of the building of typically Mississippian site plans or features (mounds, mound-plaza arrangements). The generally small size of these sites has limited the interpretation of the late prehistoric occupation of the bayou. Excavations at the Bayou Des Familles site have lead to the proposal that these sites were part of a delta-wide pattern of seasonally and functionally distinct occupations related to larger, more permanent habitations farther south, probably in the Barataria Complex communities (Kidder 1995). Sites such as Bayou Des Familles were presumably occupied by small task groups for short periods of time. When these groups accomplished their goals (in this case, we suspect, maize cultivation), they returned to the larger communities where they maintained a more permanent occupation.

In contrast with the Petit Anse region, the eastern coastal zone does not witness very dramatic changes in settlement during the post-Coles Creek era. Several important trends become evident, however. First, we see an expansion of settlement into more recently formed marsh areas and along peripheral distributary channels adjacent to the essentially modern course of the Mississippi River. Sites such as Buras Mounds and Bayou Ronquilles are good examples of this trend (Kniffen 1936; Weinstein 1987). There is also an evident pattern of nascent settlement coalescence focusing on relatively centralized, frequently mounded, communities. The extent of this pattern is uncertain due to the lack of representative settlement pattern surveys. In the eastern coastal zone, we see the formation of a small number of large mound groups which appear to be the central focus of occupation in the region. The Barataria complex sites at the confluence of bayous Barataria and Villars are one example, as are the Buras, Bayou Ronquilles, and Magnolia Mound sites. To the west, the Sims site may have supported five mounds during the late prehistoric period. Other than these mound sites, though, large late prehistoric sites are not especially evident. Bayou Petre and Delta Natchezan non-mound sites are small, and generally are associated with well elevated stretches of levees. The typical Coles Creek marsh adaptation appears to have been abandoned for one presumably more focused on the cultivation of domestic crops in well drained areas.

The reoccupation of the Bayou Des Familles channel during the late prehistoric period seems to fit into this pattern.

The subsistence and sociopolitical organization of the late prehistoric period is not well documented. A small amount of corn was recovered from uncertain contexts at the Fleming site. Evidently the maize was recovered in either Barataria or Bayou Petre phase contexts. Maize cultivation was certainly evident in the region by the mid-fifteenth century, as witnessed by the presence of corn at the Bayou Des Familles site (Kidder 1995). Analysis of the fauna from Sims indicates that the later prehistoric inhabitants of the site were exploiting a narrower range of animals, and were placing less emphasis on marsh species, notably alligator and muskrat (Davis 1987). At Pump Canal, however, the post-Coles Creek occupants appear to have been carrying on with a marsh-oriented subsistence patterns, focusing on muskrat, racoon, deer (to a lesser extent), fish, and amphibians (Misner and Reitz 1994). Smith's (1995) analysis of the fauna at the Bayou Des Familles site indicates that the range of exploitation was relatively limited, although the vertebrate faunal sample was quite small. This late prehistoric occupation (or occupations) appears to have been relatively transient and may represent the shift from "village" type occupations to more temporary, possibly seasonally occupied, camps. Changes in faunal exploitation and settlement type at Pump Canal appear to correlate with changes in local environments consequent to the subsidence of natural levees (Jones et al. 1994).

There is little doubt that the late prehistoric Indians of the eastern coastal zone were living in stratified chiefdom level societies at the time of early European contact. Weinstein and Kelley (1992) suggest a hierarchically organized settlement pattern for the late prehistoric communities in the Terrebonne marsh area, involving mound communities, lesser villages, and seasonal resource collecting stations or camps. Along Bayou Lafourche, Altschul (1978) identified two temporally distinct patterns, corresponding to what are identified as Plaquemine and Mississippian cultural occupations. These temporal and cultural distinctions do not easily fit into the existing culture historical framework since the ceramic data do not show an expected division between "clay"/Addis and shell tempering (Altschul 1978). The earlier, Plaquemine pattern evidently involved a seasonal pattern of movement focusing on a centralized fall/winter community located on interior forested levees, with spring/summer occupations consisting of dispersed habitations spread across most major landforms but especially emphasizing the exploitation of marsh and coastal resources (1978:184-186). Evidence for status differentiation in and among these communities is minimal (1978:186). Altschul (1978:184) observes that this pattern is "strikingly similar" to the so-called Attakapas pattern described by Gibson (1976, see also Gibson 1978). The second pattern described by Altschul is associated with the Mississippian occupation of the region (1978:186). At this time, Altschul suggests a different settlement pattern, with large, sedentary mound communities occupying elevated levees. Altschul hypothesizes that a sizable proportion of the villagers lived in dispersed homesteads (1978:186). He further infers that, "While there is no definitive evidence, the location and complexity of these sites indicates that plant domesticates were heavily utilized" (1978:186).

Aboriginal Populations and European Contact

The first recorded contact between Europeans and the Indians of the eastern coastal zone came in 1543 as the remnants of the De Soto expedition passed down the Mississippi on their route to Mexico. Little can be said of this episode other than to note that the Indians in this area were said to be different in aspect and color from those they had left inland (Varner and Varner 1980:595). Garcilaso also recorded that these Indians used the spear thrower with a three pronged dart. The Spaniards had "never seen this weapon before that day in any part of Florida through which they had traveled" (Varner and Varner 1980:597-598). After the passage of the De Soto expedition survivors, the eastern coastal zone lapsed into historical

darkness, as the various explorers and colonists passed around the area rather than venture into its watery maze. The explorations of La Salle and others penetrated the region, but left little in the way of documentation concerning the native populations (Margry 1883). The archeology of the latest prehistoric and the protohistoric period is essentially unknown.

Historical records from the region only begin to provide us with detail beginning in the latest part of the seventeenth century, and even then the data are sparse and incomplete. Although Europeans did not have a strong physical impact in the eastern coastal zone until the mid-eighteenth century, their impact in the form of disease and social disruption was certainly strongly felt.

The earliest French documents indicate that villages of the Ouacha, Chaouacha, and Chitimacha Indian tribes skirted the Barataria Basin, with settlements located on the natural levees of the Mississippi River and Bayou Lafourche. Other tribes, namely the Mugulasha and the Bayogoula, lived nearby along the Mississippi River, while the Acolapissa lived across Lake Pontchartrain opposite the mouth of Bayou St. John (Bienville n.d.:120; Giardino 1984b). The Ouacha and Chaouacha were likely related tribes, in the Chitimacha division of the Tunican linguistic stock (Swanton 1911). According to Bienville (n.d.:107-108) the "Tchiotimachas... are of the same genus and character as the Tchaouachas and the Ouachas, with whom they were always allied and speak practically the same language." The Chitimacha, Chaouacha, and Ouacha evidently shared a similar way of life that combined that of farmer and hunter-fisher-collector, allowing them to maximize exploitation of the resources in the eastern coastal zone (Holmes 1986:30-31).

At the time of initial contacts with the French, the Chaouacha and the the Ouacha dwelt in the area between Bayou Lafourche and the Mississippi River. The Chitimacha settlements were concentrated on the western bank of Bayou Lafourche and on Bayou Teche. However, the village locations reported by the French for these three tribes changed frequently during the early decades of the eighteenth century (Giardino 1984b). The Ouacha, and other tribes in the region, displayed a high degree of mobility and were characterized as "lazy wanderers" (Bienville n.d.:106; Davis 1984:229). The Chaouacha were said by the French "to have the same character" as the Ouacha (Bienville n.d.:106; Kniffen et al. 1987:55). The Chaouacha, Ouacha, and Chitimacha suffered adverse consequences from the arrival of Europeans in the area from an early date (Bienville n.d.). Communicable diseases ravaged the Native American population soon after the Europeans' arrival in the late-seventeenth century, and endemic warfare between tribes, which some feel was characteristic of the late prehistoric period, may have continued and further reduced the Native American population (Bienville n.d.; Holmes 1986:30-31, 35).

The French deliberately consolidated and resettled Indian villages on major waterways near their military posts, for the protection of friendly tribes and for easier observation of unfriendly ones. Warfare broke out between the French and the Chitimacha in 1706, and it continued until 1718. As a result of this war, many of the Chitimacha were enslaved by the French, and the eastern portion of the tribe was resettled near Plaquemine in 1719 (Bienville n.d.:108). The Ouacha may have been living on the Island of Barataria when the French arrived in the area (Holmes 1986:31). Early French explorers, cartographers, and settlers referred to Lake Salvador as *Lac des Ouachas* and Bayou Barataria as *Bayou des Ouachas* or *Rivière des Ouachas*, in attribution to the inhabitants near these bodies of water. The Ouacha were moved by Bienville in 1715 to a location two leagues above New Orleans, on the west bank of the Mississippi. The Ouacha in 1715 had about 50 warriors, a decline from 200 only decades earlier (Swanton 1952:211-212).

The Chaouacha allied themselves with the French in the early part of the war against the Chitimacha, and contributed about 40 warriors to a French raid against the Chitimacha in

1707 (Kniffen et al. 1987:5[illegible] In 1712, the French moved the Chaouacha to a location on the west bank of the Mississippi, near and just below English Turn (Giardino 1984b). At this time, Bienville (n.d.:106) characterized the Chaouacha as "vagabonds", but noted that "Corn is the only assistance we are able to draw from them." In 1713 or 1715, when the tribe had about 30 warriors, a party of Chickasaw, Yazoo, and Natchez attacked the Chaouacha settlement, killing the head chief and several of his family and taking 11 persons prisoner (Swanton 1952:201-202). André Pénicaut was surprised to find English slave dealers from Charleston, South Carolina, at the Natchez settlement, there for the express purpose of buying these Chaouacha captives (McWiliams 1953:159). The Chaouacha moved to the east bank of the Mississippi before 1722. In the aftermath of the Natchez massacre at Fort Rosalie in 1729, the Chaouacha were attacked by a band of African slaves operating under the authority of Governor Perrier. At the time of the attack, there were only some 30 members of the Chaouacha. Some of the survivors probably joined the Chitimacha (Kniffen et al. 1987:79). In 1739, the remaining Chaouacha moved to the west, beyond the Barataria Basin, settling in the vicinity of the Côte Des Allemands post. There they joined with the Ouacha, making a village with about 30 warriors. By 1758, there were only 10 to 12 warriors at the Chaouacha-Ouacha village (Swanton 1952:201-204). By the late-eighteenth century, the Chaouacha-Ouacha may have joined in the fusion of tribes called the Houma (Kniffen et al. 1987:55-56).

There is little documentation of how Native Americans utilized the Barataria Basin in historic times. Pénicaut referred to the Chitimacha, Chaouacha, and Ouacha as "highly industrious and all are quite helpful in furnishing food to the French, to the troops as well as to the people on the concessions" (McWiliams 1953:220). Le Page du Pratz, who left Louisiana in 1734, stated that

> Between the Mississippi River and these lakes, which are filled with water overflowing from this same river, is a small nation named the Tchaouacha, and a small village of the Ouachas, that are one same nation. Together these two are of so little consequence that the French of Louisiana are barely acquainted with them other than for their name (du Pratz 1758 II:230).

Pénicaut records several instances of Chitimacha groups traveling from villages to fish in nearby lakes or bayous (McWilliams 1953:71-72, 101-102), and Bienville (n.d.:108) specifically observed that the Chitimacha "passed a part of the year along the lake shores where they go fishing, at which they are very skillful." In both of the recorded examples given by Pénicaut, these groups consisted of men, women, and children; it is not clear from these accounts, however, how long these trips would have lasted. In one instance the fishing party was set on by the Europeans and some "escaped to their village and gave the alarm" (McWilliams 1953:101-102), suggesting that this aspect of the subsistence round did not involve the entire population of the village. The Chitimacha probably exploited the basin for hunting and fishing, but it is evident that Lake Salvador was a principal area for the Ouacha and Chaouacha villages (Swanson 1991). The Trudeau map of 1803 (Figure 6) shows the village of the Ouachas on the southeastern shore of Lake Salvador, and notes that here was where "the bones of the nobility were heaped. According to tradition a mountain formed only of skulls has been found here." Farther to the west along the lakeshore is a depiction of hills or mounds with the caption reading "Village of the Nation of the Chaouachas where there was a temple for the celebration of religious [idolatrous] ceremonies. They keep the bones of their nobles in a separate building" (Figure 6; see also Swanson [1991:14] for a slightly different translation).

The material culture of the Native populations in the eastern coastal zone is only dimly understood. Evidently some of the European peoples living along Bayou Des Familles were receiving Native ceramics (or Native ceramicists were making them on site). Excavations at 16JE216 revealed a substantial ceramic assemblage recovered from contexts which indicate the

that the Native wares were contemporary with the European occupation (Yakubik 1989). The principal decorated aboriginal type at the known historic period sites is Maddox Engraved. Sherds assigned to this ceramic type have also been recovered in very small numbers at late prehistoric and early historic sites on Bayou Des Familles (Fuller 1991; Giardino 1989, 1990; Wells et al. 1995). Only at 16JE216, however, does this type comprise a large percentage of decorated pottery assemblage (69 percent of all decorated sherds at 16JE216 were identified as Maddox Engraved) (Giardino 1989:107). Other decorated ceramics present in these sites are Buras Incised, Anna Incised, and Medora Incised (probably better considered a variety of Mazique Incised) (Fuller 1991; Giardino 1989, 1990; Wells et al. 1995). All of these ceramics are found in the later prehistoric period. Buras Incised (specifically *var. Oyster Road*) has been identified at the Bayou Des Familles site and clearly dates to the early-to mid-fifteenth century (Kidder 1995; Wells et al. 1995). In contrast to other historic Indian ceramics of the eighteenth century (Brain 1979, 1988), the Barataria basin pottery associated with later-eighteenth-century contexts is remarkably well made (Giardino 1989:106). As Giardino notes, "it is believed that most Indian societies in the Barataria Basin were either extinct or well on their way to extinction by the end of the eighteenth century... The presence of well-made wares in this late context [at 16JE216] possibly contradicts this proposition and raises important issues concerning the longevity and cultural continuity of Indian culture into the nineteenth century" (1989:106).

The "Tunica Treasure," which relates to the early-seventeenth century, provides an interesting comparative note in looking at the Barataria historic Native American materials (Brain 1979). The bulk of the Tunica Treasure is made up of European goods with a relatively small quantity of Native ceramics. Many of the Native pottery types are clearly broken down when compared to their antecedents in the protohistoric period. In fact, Brain (1988) notes that the Tunica were rapidly acculturating and were quickly losing their material culture through the use of increasing quantities of European goods. The critical datum provided by the Tunica Treasure makes the Barataria data all that more unique and crucial. The natives who were supplying the *Isleño* colony on Bayou Des Familles with aboriginal pottery had been in contact with Europeans for nearly a century. We can presume from the historic record that relatively intensive economic interaction began by the founding of New Orleans in 1718, if not earlier. It is thus a surprise to find a viable Native ceramic industry in the later eighteenth century. On the other hand, several ethnographic accounts of early-twentieth-century Native American populations (Chitimacha and Choctaw) in the New Orleans area indicate that the manufacture of native ceramics was an important craft throughout the nineteenth century and presumably earlier (Bushnell 1909, 1917).

Two hypotheses can be suggested. One is that Native populations in the marshes south of New Orleans may not have been that actively engaged in contact with the Europeans. Groups such as the Ouacha and Chaouacha were likely economically and certainly politically marginal to the French and Spanish colony (see Bienville n.d.; du Pratz 1758). In this regard, the Tunica may have been unusual for playing such a pivotal role in French and later Spanish colonial politics and diplomatic relations (Brain 1979, 1988). Acculturation may have been less drastic among these marginal groups. Further, these people may have been actively resisting acculturation. The Chitimacha were actively resisting European acculturation in the eighteenth century (Bienville n.d.; McWilliams 1953). Perhaps, unlike the Tunica, the natives of the eastern coastal zone may have been less than enthusiastic about the presence of, or presents from, the European interlopers.

A second consideration is that the presence of moderate quantities of Native ceramics in *Isleño* settlements on Bayou Des Familles is a reflection of the depauperate material culture that these settlers were left with. The evidence strongly suggests that the *Isleños* were given only a modest quantity of material goods (see Chapter 6). The probable shortage of goods may have encouraged a trade or exchange pattern with the Native populations who were likely

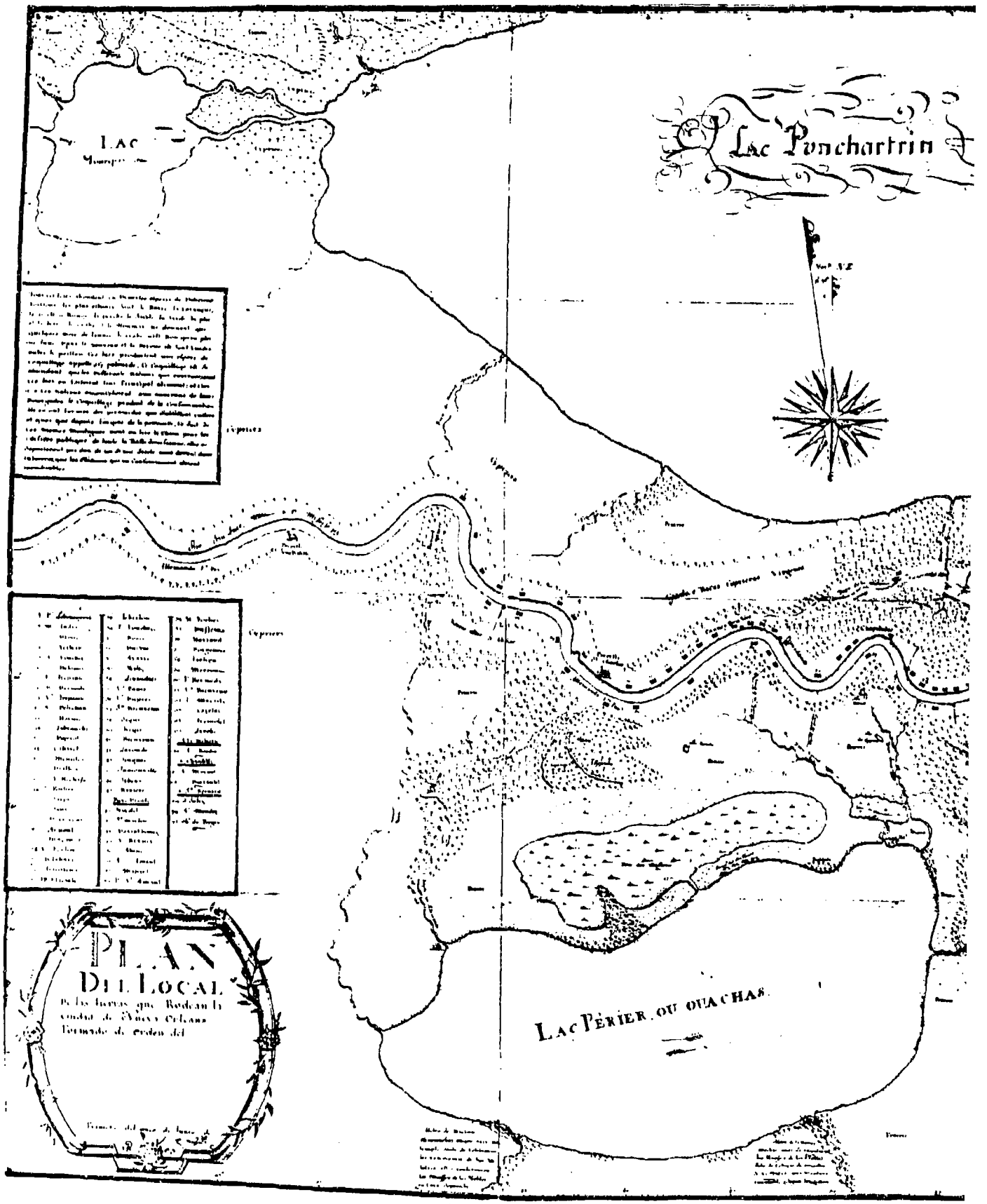
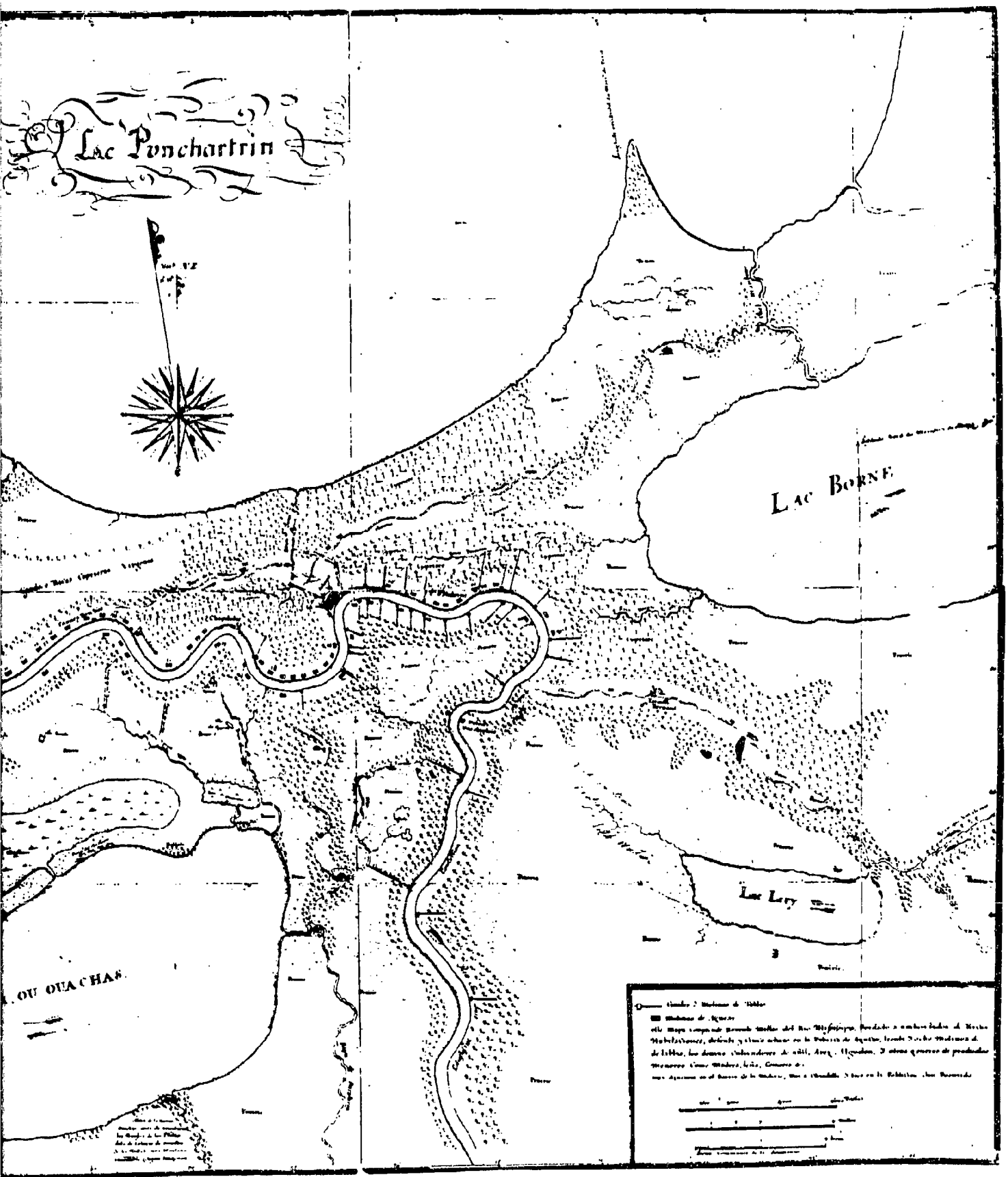


Figure 6. Carlos Trudeau's (1803) *Plan del Local de las Ti*
Nueva Orleans (Courtesy of The Historic New Orleans Coll



eau's (1803) *Plan del Local de las Tierras que Rodean la Ciudad de*
esy of The Historic New Orleans Collection).

occupying the land around Lake Salvador to the south. We cannot be certain if the trade was in vessels, or the contents of vessels (what ever that may have been). These ceramics, though, are a mute testimony to the degree of interaction between the colonists and their Native neighbors.

A final consideration should be encouraged as well. It is possible that sites such as 16JE216 may have been the settlements of Natives living on Bayou Des Familles in the later eighteenth century. While the documentary evidence for such a hypothesis is not overwhelming, there is at least one early-nineteenth-century map showing "Indian Huts" on the west side of the Barataria road in the vicinity of modern Marrero (Williams 1842, cited in Kelley and Bryant 1986:Figure 3). Similarly, Grevemberg's reference to a village of the Ouachas may be interpreted as indicating an occupation on Bayou Barataria near the mouth of Bayou Des Familles in 1779 (Archivo General de Indias, Papeles de Cuba, Legajo 2358; see Chapter 6). Clearly the possibility of Native habitation along the banks of Bayou Des Familles cannot be ruled out. Furthermore, the archeological data from sites such as 16JE216 cannot be used to argue against such a hypothesis, since we could expect such a Native settlement to have substantial quantities of trade goods.

Summary

The archeology of the eastern coastal zone is only now beginning to come into focus, and we are just starting to develop an appreciation for the complexity evident in the region. There is a strong correlation between the regional culture history and changes in the environment, caused ultimately by shifts in the Mississippi River's course. Native Americans in the region adapted themselves to these changing environments in a number of ways. The initial occupation of the eastern coastal zone is during the Poverty Point period. We know little about these occupations in terms of subsistence or social organization. Evidently some of these coastal populations were participating in the widespread Poverty Point interaction sphere.

The first well recognized occupation of the region occurred during the early Woodland period and is associated with the Tchefuncte culture. Tchefuncte occupations are especially common along Lake Pontchartrain, but are infrequent farther south. Some tentative evidence suggests that it was at this time that humans began to move into the lower Barataria region. No Tchefuncte materials have been positively recovered from sites along Bayou Des Familles.

The succeeding Marksville period witnessed an expansion of human populations into the eastern coastal zone, and marks the first extensive colonization of the lower Barataria Basin. Excavations at the Coquilles site indicates the presence of an extensive and perhaps intensive early Marksville period occupation. Although Beavers (1982a, 1982b) ascribes to this occupation a great deal of cultural complexity, the currently available data do not support such an interpretation. It is possible that the Coquilles site represents evidence for interaction with the Hopewellian-related Marksville culture, but we simply cannot judge the external relations based on what is now known. Certainly neither the Coquilles nor Boudreaux sites yielded evidence for the complex mortuary programs, trade contacts, or social complexity normally associated with Marksville culture.

Late Marksville occupations are also evident in the eastern coastal zone. Based on the ceramics, these appear to be similar to those identified with the Issaquena culture farther north, but specific cultural connections have not been illuminated due to a lack of well controlled excavations. Several important components of this time period have been suggested, most notably at Coquilles and Bayou Cutler. There are also a number of sites along Bayou Des Familles which might date to this interval, but once again, specific data and exact chronologies are lacking.

During the Baytown period the coastal zone witnesses an increase in population, or at least habitation. The lower Barataria Basin is home to several sites of this period, notably Isle Bonne, which appears to date to the later part of the Baytown sequence. Along Bayou Des Familles there are some sites attributed to the Baytown period, but they do not show the classic characteristics, especially red filmed pottery, and French Fork Incising. We can speculate that at this time there was a movement of peoples out from the interior part of the basin towards the marsh and coast to the south. Although Bayou Des Familles was not abandoned in any sense, there are no major Baytown period habitations identified along its channel.

The pattern noted in the Baytown period continues in the Coles Creek period. Along the coastal zone populations continue to expand, especially along channels extending into the marsh. Some parts of the Barataria region see fairly intense occupations. This intensification is especially notable south of the confluence of bayous Barataria and Villars, and to the west in the Bayou Des Allemands region and extending to Lake Salvador. Coles Creek peoples seem to be very intensively exploiting marsh habitats, and they do not appear at present to have been cultivating domesticated plants. There are few Coles Creek habitations along Bayou Des Familles, and certainly none of the very large, thick midden sites known from areas to the south or west.

During the Mississippi period we see a gradual shift from the Coles Creek pattern of marsh exploitation towards one evidently oriented towards agricultural practices. During the early part of the period, there is little change. By the Barataria phase, there may be some contraction in the number of sites and the range of exploitation. There is an increasing emphasis on larger, possibly more permanent settlement along well drained levees. A distinctly bimodal settlement patterns evolves by ca. A.D. 1300-1400, with large villages, frequently with mounds, being located on well drained soils, and with small, dispersed communities scattered across most of the major landforms. By the late prehistoric period this pattern seems to be emphasized, especially along the major tributaries and waterways. Bayou Des Familles sees an increase in habitation, presumably as peoples exploit the area for its relatively high land. Settlements along the bayou continue to be small, and appear to reflect shifting horticultural practices. Major mound centers were probably the locations of ruling civic and religious elite. Small groups appear to have moved out from these centralized communities to accomplish seasonally specific tasks such as cultivating maize or gathering nuts.

Although there is reason to believe that European contact and colonization led to the rapid decline in Native American populations throughout the Southeast, there is no solid evidence that the late Mississippi period populations in the coastal zone maintained their integrity through the early sixteenth century. At first contact, the peoples of what is now the delta region of the Mississippi River left no great impression on the Europeans. The only record of note concerning this first contact is the fact that these coastal zone Indians were still using spear throwers. It is possible, but certainly not proven, that with the late Mississippi period, chiefdoms of the Louisiana coastal zone lost their coherence prior to the arrival of the Europeans. Perhaps this fact was related to the decline of Moundville, Bottle Creek, and other Pensacola centers on the eastern Gulf Coast, although this is only one possible hypothesis. Clearly, though, by the time of later European contact in the early historic period, the last vestiges of the rich prehistoric tradition of the delta zone were rapidly disappearing. A viable, if considerably less impressive Native population occupied the region during the time of European colonization. These people have been identified as the Ouacha and Chaouacha, and it is increasingly evident that their presence was an important component in the development of European settlement on Bayou Des Familles. Their contribution to the French and Spanish colonies is uncertain, but if we judge the archeological remains from sites on Bayou Des Familles it was notable, if not very important. Native groups, possibly the Ouachas or Chaouachas, continued to live in the area up to the nineteenth century.

CHAPTER 5
HISTORY OF THE BARATARIA BASIN AND THE STUDY AREA

French Settlement

Bayou Barataria was evidently discovered by the French in about 1722 (Swanson 1991:49). The original French edition of Le Page du Pratz' *Histoire de la Louisiane*, published in 1758, provides an early description of the Barataria area, and how it came to be named:

> On leaving that coast [of the Gulf of Mexico] of white and crystal sand in order to go northward, we find five or six lakes which communicate with one another and which are, doubtless, remains of the sea. Between these lakes and the river [Mississippi], is an earth accumulated on the sand, and formed by silt of the river... between these lakes there is nothing but sand, on which there is so little soil that the sand-bottom appears to view; so that we find there but little pasture which some strayed buffaloes come to eat; and no trees, if we except a coast on the border of one of these lakes [Lake Salvador] which is all covered with evergreen oaks, fit for ship-building. This land extends a league in length by half a league in breadth; and was called Barataria, because it is enclosed by these lakes and their outlets, to form almost an island on dry land, as was that of which Sancho Panza was made governor [in Miguel de Cervantes' *Don Quixote*] [quoted in Swanson 1991:1].

To the north of the area described by Le Page du Pratz, in the vicinity of modern Bayou Des Familles, were narrow natural levees of alluvial soil supporting stands of live oaks, with backswamps in *cyprière*. French reconnaissance of the Barataria region made evident the area's potential for the extraction of timber, game, fish, furs, and shell (see for example, Bellin 1764). The earliest French place-name to occur in the area was *L'Hermitage*, appearing on a number of eighteenth-century maps in the area to the east of Lake Salvador. The significance of this place-name is not known (Holmes 1986:49), but Swanson suggests that this term was applied to structures used for religious purposes (Swanson 1991:15).

The first land grant in the Barataria area was that made by the Company of the Indies on June 14, 1726, to Jean-Baptiste Massy and his partners, Jean-Baptiste Bourbeau and Charles Frederig de Merveilleux. Each received a forty-arpent front tract on Bayou Barataria. 16JE223 is located within the boundaries of Massy's tract. Prior to receiving their grant, these partners had been under contract with the Company of the Indies to cut oak and ash and deliver the logs to the Mississippi River. Massy soon dissolved his partnership with Merveilleux, and Bourbeau was killed in the Natchez massacre at Fort Rosalie in 1729 (Goodwin et al. 1989:20). Massy also previously owned concessions at Pointe Coupee and on the Chapitoulas coast of the Mississippi River. He engaged in numerous commercial and agricultural projects, and was a member of the Provincial Superior Council when he died in 1734. On his Barataria plantation, Massy grew cotton and tobacco and raised livestock. In this period, logging roads were built along the east side of what became Bayou Des Familles. In the 1727 census, Massy is listed as residing on his Barataria property with an orphan boy and 27 black slaves. The 1731 census indicates that Massy lived on his Barataria tract with one woman, two European *engages*, three men capable of bearing arms, 30 adult black slaves, and 21 slave children. The woman in the 1731 census, Jeanne Faucon Dumanoir, later married Massy (Goodwin et al. 1989:20-22). At the time of Massy's death in 1734, he had on his Barataria tract a 65-person slave force, a dwelling house, steward's house, 10 slave cabins, a cotton storehouse, and two tobacco storehouses or curing houses (Swanson 1991:50-51). These structures were not located in the vicinity of the study area.

Massy's widow, Jeanne Faucon Dumanoir, married Gilles Augustin Payen, *Chevalier* de Noyan, *Major* of New Orleans, who ceased to attempt to cultivate the Barataria tract. Noyan and Benoist Payen, *Chevalier* de Chavoye, utilized the Barataria property as a horse ranch for nearly two decades after Massy's death (Swanson 1988:83). In actuality, the horses ran wild and little attempt was made to keep a careful accounting of their whereabouts.

Claude Joseph Villars Dubreuil received large concessions in the Barataria Basin prior to 1732, and he engaged in energetic developmental efforts. He had a canal dug from a branch of Bayou Barataria to the Mississippi River, and undertook logging, boat building, ranching, and wax myrtle harvesting at his Barataria holdings. Elsewhere he grew indigo and experimented with sugar cane, and may have attempted farming in Barataria (Holmes 1986:50, 53). In 1761, Claude Dubreuil *fils*, son of the original concessionaire, petitioned Governor Kerlerec to re-grant the concession of Massy, Merveilleux, and Bourbeau, contending that it had been vacant for 17 years, except for a man placed there for a few years by Chavoye to try to prevent the horses from straying onto Dubreuil's land (Swanson 1991:53).

Simultaneously with Dubreuil's attempts to have the Barataria tracts re-granted, Chavoye petitioned that title to 23 arpents fronting on the *Rivière des Ouachas* be re-conceded to him so that he could again establish his ranch. In addition, Chavoye stated that in 1736, Noyan had petitioned Governor Bienville to re-grant the Massy concession to himself. However, in early July 1761, a large portion of the 120 arpents of Massy and his partners were conceded to other colonists. The 120 arpents were subdivided into six 20-arpent-front tracts. One was re-conceded to Chavoye and the others granted to *Sieurs* Dauterive, Dezillest, Verdun, Dubourg, and De Trant (Swanson 1991:53-54).

Jean Antoine Bernard Dauterive was one of five sons of Bernard Dauterive who came to Louisiana from France (Falcon 1981:19). Jean Antoine Bernard Dauterive and his brother Joseph Philippe Bernard Dauterive were both military officers, and each was married in New Orleans in the 1760s (Woods 1988:69). Jean Antoine Bernard Dauterive was one of the persons granted a 20-arpent front tract in Barataria, formerly held by Massy, in 1761. The original record of this conveyance has been missing since 1823 (Swanson 1988:91), at least, and further details of Dauterive's holdings in Barataria must be gleaned from nineteenth-century litigation concerning his descendants and others who purchased Barataria tracts. Evidently, by 1762, J.A.B. Dautrive had acquired four of the five other 20-arpent front tracts created from the Massy and Co. concession the previous year. Dauterive's consolidated tract was of approximately 90 arpents front, with a depth of 110 arpents, fronting on Bayou Barataria and reaching back beyond the west side of modern Bayou des Familles (Swanson 1988:84-85). 16JE223 is within Dauterive's consolidated holding.

J.A.B. Dauterive maintained a house on Royal Street in New Orleans (Porteous 1925:528) and utilized his Barataria property to grow indigo and raise livestock. Dauterive built a habitation at his Barataria tract (Swanson 1988:84), but in 1765 he received a large grant on the Mississippi and another in Attakapas (*New Orleans Genesis* 3(11):203; Rees 1976:91; Falcon 1981:125). After 1765, J.A.B. Dauterive became more interested in his property in the Attakapas, where he sponsored the settlement of Acadians to raise livestock (Rees 1976:91). In 1768, he subdivided his approximately 90-arpent front Barataria property into four tracts of 10 arpents front by a depth of 110 arpents, and one of 50 arpents front. The same year, he sold four of these adjoining tracts at the upper or northeastern end of his property to Antoine Boudousquié and Elie [or Hery] Hugues. Included in the sale were Dauterive's buildings, 100 head of cattle, 100 head of sheep, 20 pigs, 60 piglets, and two native American slaves. One of the slaves, Ponipée, was a hunter and herder; the other, Marianne, was a female adolescent or child (Swanson 1988:84-86). In a legal proceeding in 1771, Jean Antoine Bernard Dauterive stated that he had a 43-arpent front tract in Barataria

(Porteous 1925:528). This discrepancy in frontage is not surprising for an eighteenth-century conveyance, and may indicate that the boundaries of Dauterive's tract were indistinct.

Hugues and Boudousquié dealt in furs and probably intended to harvest furs from their Barataria tract. In 1772, Hugues returned to France after selling his one-half interest in the 40-arpent-front by 110-arpent-depth Barataria tract to Alexander Guerbois. Guerbois and Boudousquié ended their partnership in 1774. They partitioned one-half of their land and sold the other half. Pedro Albert Bonne purchased a 20-arpent-front by 110-arpent-depth tract from Guerbois and Boudousquié. The portion purchased by Bonne straddled the confluence of Bayou Barataria and Bayou Des Familles, at the upper end of the former Dauterive tract, and the terms of the sale included the buildings, fields, fences, cattle, horses, sheep, pigs, and utensils present on the property (Swanson 1988:85-86). Bonne's tract included the current study area.

Pedro Bonne grew indigo, raised sheep, and engaged in the lumber business. In addition to his 20-arpent-front property in Barataria, he had another tract of 8 arpents front on the Mississippi River. Bonne died in 1799, leaving as his heirs five free mulatto children by two of his former slaves. Prior to his death, his Barataria tract was leased by José Andoesa, but Bonne's family apparently dwelled on the land throughout the Spanish and early American periods. By the late 1770s, the Bonne tract had become known as the *île de Bonne* (Swanson 1991:57), a name retained into the twentieth century by a small island at the confluence of Bayou Barataria and Bayou Des Familles.

As is discussed in detail in Chapter 6, the Spanish colonial government decided to establish a settlement of Canary Islander immigrants in Barataria, along what came to be known as Bayou Des Familles. The Spanish crown evidently purchased some tracts in Barataria and acquired others by eminent domain. Pedro Bonne sold one of his 10-arpent-front tracts to the Spanish Crown prior to May 14, 1779, on which date he sold the adjacent tract of 10 by 110 arpents to Luis Pellerin. The tract purchased by Pellerin contained 16JE223. Pellerin sold this tract to Andrès Jung, who had been made Commandant of the Baratarian Canary Islander settlement, and Jung donated the 10-arpent-front strip to the Spanish Crown on July 12, 1779 (Goodwin et al 1989:23). The Crown repossessed additional, vacant adjoining lands in this vicinity for distribution to the Canary Islanders, including back lands of the Boudousquié, Guerbois, and Dauterive tracts that were not then occupied (Swanson 1991:59-60).

The Población de Barataria was a failure, and most of the Canary Islanders had left the area by 1785 (see Chapter 6). The Spanish Crown nullified grants of most of the land in Barataria after it became vacant when the *Isleños* departed, and regranted it to new owners. These new grants were usually large, with 20 to 40 arpents front on Bayou Des Familles and a depth of 40 arpents on either side of the bayou (Swanson 1988:138). Subsequently, the chain of title for these Barataria lands became confused and would provide decades of work for numerous lawyers in the first half of the nineteenth century. Among the grants made by Governor Carondelet was one made to Nicolas Daumé of 12 arpents front, with a depth of 40 arpents, on both sides of Bayou Des Familles. The lowerline of Daumé's tract was determined in later litigation to be the section line where Section 2 of T.15S R.23E meets Sections 37 and 38. This boundary line corresponds with the northern edge of the National Park and the alignment of the existing hurricane protection levee (Swanson 1988:141-142; Swanson 1991:93-94). 16JE223 lies within Daumé's tract, near the lower boundary of his property.

On April 2, 1800, Governor Casa-Calvo made a grant of seven arpents eight toise front by a depth of 40 arpents, on both sides of Bayou Des Familles, to Pablo Suárez Ruiz, one of the original *Isleño* settlers. This grant included Sections 3, 38, and part of Section 1 in T.15S R.23E.. At Suárez's death, his widow, María Olivares, married José Gálvez, who died in

1802. María Olivares, who was probably the last *Isleña* to reside in Barataria, died in 1807 (Swanson 1988:142-145). In later decades, confusion arose as to whether or not the portion of Section 1 containing 16JE223 was within the Suárez tract. (Swanson 1991:97). Legal clarification eventually established that 16JE223 was not, in fact, within the Suárez tract.

Prior to 1789, Francisco Bouligny had purchased a plantation on the west bank of the Mississippi originally owned by Joseph Villars Dubreuil. In 1789, Bouligny obtained from Governor Miro an "order of survey" granting him the lands behind his plantation that bordered the Dubreuil canal and Bayou Barataria, for a depth of several leagues. In 1792, Jean-Baptiste Degruy and his partner, François Mayronne, purchased this plantation from Francisco Bouligny, including all of the lands and rights given to Bouligny. In 1800, Degruy petitioned Governor Casa-Calvo for confirmation of the tract purchased by Antoine Boudousquié from Jean Dauterive in 1768 and other lands upstream along Bayou Barataria. There were two families living there at that time, Degruy noted in his petition (Swanson 1991:107, 109). These tracts for which Degruy sought confirmation of his title later figured in the litigation that embroiled the Barataria lands in the first half-century of U.S. possession.

Barataria in the Early American and Antebellum Periods

The area remained sparsely populated for the first few decades of the American period. The *Camino Real*, along which the *Isleños* had been settled, remained in use in the American period and became known as the Barataria Road. The nineteenth- and twentieth-century history of the Barataria Road is discussed in greater detail below. Many of the Spanish grants made in the 1790s by Governor Carondelet were surveyed and certified by the U.S. Surveyor-General's office after the accession of Louisiana to the United States. However, several claims of title were made by litigants that derived from the Dauterive subdivision of 1768, and these became involved in litigation.

At the death of María Olivares in 1807, she left her property to Marie Dauberville, widow of Francisco Bouligny, and their minor son Luis Bouligny. Marie Dauberville received the portion of the Pablo Suárez Ruiz grant lying west of Bayou Des Familles, and Luis Bouligny received the portion to the east of the bayou. An 1816 survey of the Louis (Luis) Bouligny tract by Barthélemy Lafon indicates that the east bank at this time was characterized as elevated wooded land (*terre haute boisée*) (Swanson 1988:153). Evidently, in 1815, Dominique Bouligny, owner of the tract above Louis (Luis) Bouligny, built a bridge across Bayou Des Familles immediately above the Suárez tract upper line, so that he could remove his sugar cane crop to higher ground. This bridge is described in a court case as being located near the modern protection levee at the upper side of Section 38 (Swanson 1988:256), very near 16JE223.

As a result of a boundary dispute in 1819 (below), the upper line of Luis Bouligny's tract was established as the upper boundary of Section 38. This boundary was adjacent to a dairy farm Luis was operating at that time, at the lower end of the plantation of Domingo (or Dominique) Bouligny. If this was in fact the case, the dairy farm would have been established when the upper line of the Suárez grant was unclear, and Luis Bouligny believed the lower part of Section 1 to be on the Suárez grant. Thus, Luis Bouligny's dairy farm may also have been in proximity to 16JE223.

In 1807, Jean Baptiste Degruy and François Mayronne partitioned their plantation, which reached from the west bank of the Mississippi River to Barataria. Mayronne retained the greater part of the river-front plantation, while Degruy received a smaller portion of the river frontage and the lands extending down to Barataria. Subsequently, Degruy purchased Mayronne's portion. By 1809, Degruy was living at the confluence of Bayou Des Familles and Bayou Barataria and growing sugar cane on the east bank of Bayou Des Familles, the first

planter recorded as growing sugar cane on a commercial scale in Barataria. In 1810, Degruy resold Mayronne's former portion to the partnership of Jean Jacques Bonne and Honoré Mourlot. Unfortunately for Degruy, Bonne and Mourlot were unable to meet the terms of sale of the former Degruy-Mayronne plantation (Swanson 1991:107-108).

The failure by Bonne and Mourlot may have contributed to Degruy's bankruptcy in 1812. Despite a wide diversity of activity, Degruy was unable to remain solvent. He was a master carpenter and building contractor, and he grew sugar cane on his plantation. He also thoroughly exploited his Barataria lands. On them he grazed about 300 head of cattle, produced fence posts and pickets from lumber, and manufactured carts. He established a lime-making facility in Barataria, mining prehistoric Indian mounds for shells and reducing them to lime in primitive kilns that may have been set up in proximity to the source mounds. It is possible that he mined shell middens along Bayou Des Familles. Degruy also cooperated with the infamous smugglers of the Barataria area, including the Lafitte brothers (Swanson 1991:109-111).

A colorful and legendary figure, Jean Lafitte and his two brothers, Pierre Lafitte and Dominique You, moved into Barataria Bay in 1805 to engage in smuggling and privateering. Barataria was an ideal base for these activities, with a deep-water anchorage at Grand Terre, and a network of waterways that allowed transportation of goods to the city of New Orleans, as well as to Bayou Lafourche and the plantations above the city. The Baratarian landowners were, for the most part, in various degrees of complicity with Lafitte. Between 1805 and 1814, Lafitte built a commercial empire from his base in Barataria, with perhaps several hundred men in his company. However, the size of Lafitte's illicit operations made it impossible for the United States government to ignore him. The U.S. Navy suppressed his activities, raiding Lafitte's base and taking him and his men prisoner. Lafitte and his men were released from prison to take part in the Battle of New Orleans, and subsequently, they were pardoned. Lafitte gave up on Barataria and moved his base of operations to Texas (Holmes 1986:59-60).

Jean-Baptiste Degruy's plantation was seized by his creditors, and sold in 1819 to the partnership of Joseph Tricou and sons and Dominique Bouligny. Tricou and Bouligny began logging operations on the 30-arpent-front tract prior to making payment on the property. However, included in the sale was the property of Jean-Joseph Jourdan, possibly one of the occupants mentioned in Degruy's 1800 petition (see above). Jourdan, a master baker, had New Orleans as his principal residence. In 1800, Jourdan purchased the 20 arpent front by 40 arpent depth tract of Jean Normand, lying on both banks of Bayou Des Familles. Jourdan maintained a cabin for an indefinite period in Barataria, evidently on the eastern bank of Bayou Des Familles. Jourdan kept cattle on his tract and had several slaves who tended the cattle and cultivated corn, rice, and raised poultry. Jean Joseph Jourdan apparently also received prizes taken by privateers under the flag of Cartagena prior to 1806, raising the possibility that Jourdan's Barataria establishment may have been used for smuggling or movement of contraband (Swanson 1988:155-156).

After the sale of Degruy's plantation, Jourdan brought suit against the Tricous and Bouligny. As a result, the sale to Tricou and Bouligny was nullified because of unclear title, in spite of Degruy's attempts to have his claims confirmed by the Spanish regime. In 1809, Thomas Durnford had acquired a mortgage from Degruy, and entered the legal fray as one of Degruy's creditors. In 1820, Durnford petitioned for a seizure and sale of the Degruy property, and purchased the Degruy lands at a public sale. Louis Pelteau had received a grant of a tract on Bayou Des Familles from Governor Carondelet in 1794, and he may have been one of the other residents mentioned in Degruy's 1800 petition. Pelteau's heirs objected to the sale of Degruy's tracts to Durnford, and the syndics of Degruy's creditors had the sale of the lands to Durnford enjoined by the court. Despite these complications, Durnford sold the Degruy properties to John McDonogh in 1823, with none of the legal issues resolved (Swanson 1991:111).

Noël Jourdan had purchased the Nicolas Daumé tract (see above) and sold it in 1833 to John McDonogh in a private act of sale in St. James Parish. The U.S. Surveyor-General's office certified McDonogh's claim of 12 arpents on the east side of Bayou Des Familles, based on the acquisitions of Jourdan and Daumé, and located between the grants of Pablo Suárez and Louis Pelteau. The location of the Daumé tract was obviously confusing, since (according to Swanson) the former Jourdan tract became part of McDonogh's holdings in Section 57 of T.15S R.23E, although the Daumé tract actually had as its lowerline the southern boundary of Section 1 (Swanson 1988:156-159; Swanson 1991:91:94, 96).

John McDonogh's solution to the numerous questionable titles he held in the Barataria area was to buy numerous crossing tracts, eventually eliminating competing claims. He bought the Spanish land grant tracts of Ruiz and Daumé, as well as those of Louis Pelteau and Jean Normand, whose tracts lay further down Bayou Des Familles. McDonogh also bought Durnford's properties, although without gaining title, and then bought the same tract from Sosthène Roman, syndic of Degruy's creditors, in 1837 (Swanson 1991:112). Figure 7 is a 1842 map showing property ownership in the area of Bayou Des Familles.

After consolidating his ownership of the Barataria tracts, McDonogh fenced much of his Barataria property, closed off roads, and destroyed a bridge across Bayou Des Familles, perhaps the one constructed by Dominique Bouligny. Although other planters grew sugar cane on their Barataria tracts, McDonogh apparently made no particular use of his Barataria lands and did not improve them, but he did keep at least one slave on the property as a caretaker. When the Police Jury of Jefferson Parish constructed a public road along the west bank of Bayou Des Familles in 1841, McDonogh sued the Police Jury and had the road closed. In 1842-1843, the Barataria public road was established on the east bank following the old route of the *Camino Real* (Swanson 1988:245-246; Swanson 1991: 112-113, 146).

By the last decade of the antebellum period, the population of Barataria had increased substantially since the decline of the *Isleño* settlement. Despite a major crevasse in 1849-1850, 1,176 inhabitants were enumerated in the Barataria region in the 1850 census. Of these, 657 persons were white and 504 persons (46 percent of the total) were slaves. Of the slaves, the great majority (79 percent) were owned by large plantation owners and lived at the plantation centers, rather than dispersed in the back lands. A small majority (51 percent) of the adult free males in the Barataria region worked full- or part-time on the large plantations as engineers, overseers, skilled laborers, etc., and overall, 65 percent of the total Barataria population lived on the plantations. Of the remainder of the white male inhabitants who did not work on the plantations, 25 percent had their occupation listed in the census as hunter, 9 percent worked on the water, and 8 percent were farmers. However, many of these free residents of Barataria probably worked at a number of occupations, hunting, fishing, logging, and doing agricultural labor on a seasonal basis (Holmes 1986:89).

The properties of John McDonogh were divided and sold at auction following his death in 1859. Large sugar plantations remained in the Barataria vicinity throughout the antebellum period, despite another major, devastating crevasse in 1858. Sugar planters bought much of the available land formerly owned by McDonogh in the Barataria Basin. Laurent Millaudon, who had purchased the Domingo Bouligny tract, was one of the wealthiest men in Louisiana and owned the largest sugar plantation in the state. Millaudon's 28-arpent-front plantation on the Mississippi was known as the Millaudon Front Plantation, and later, Southside Plantation. The rear portion of Millaudon's property extended down Bayou Des Familles, and was called Estelle Plantation. 16JE223 is located at the lower edge of Millaudon's Estelle Plantation, referred to as Lower Estelle. Evidently, the area was used for livestock grazing and logging rather than cultivation during Millaudon's ownership. Sugar production at Estelle suffered

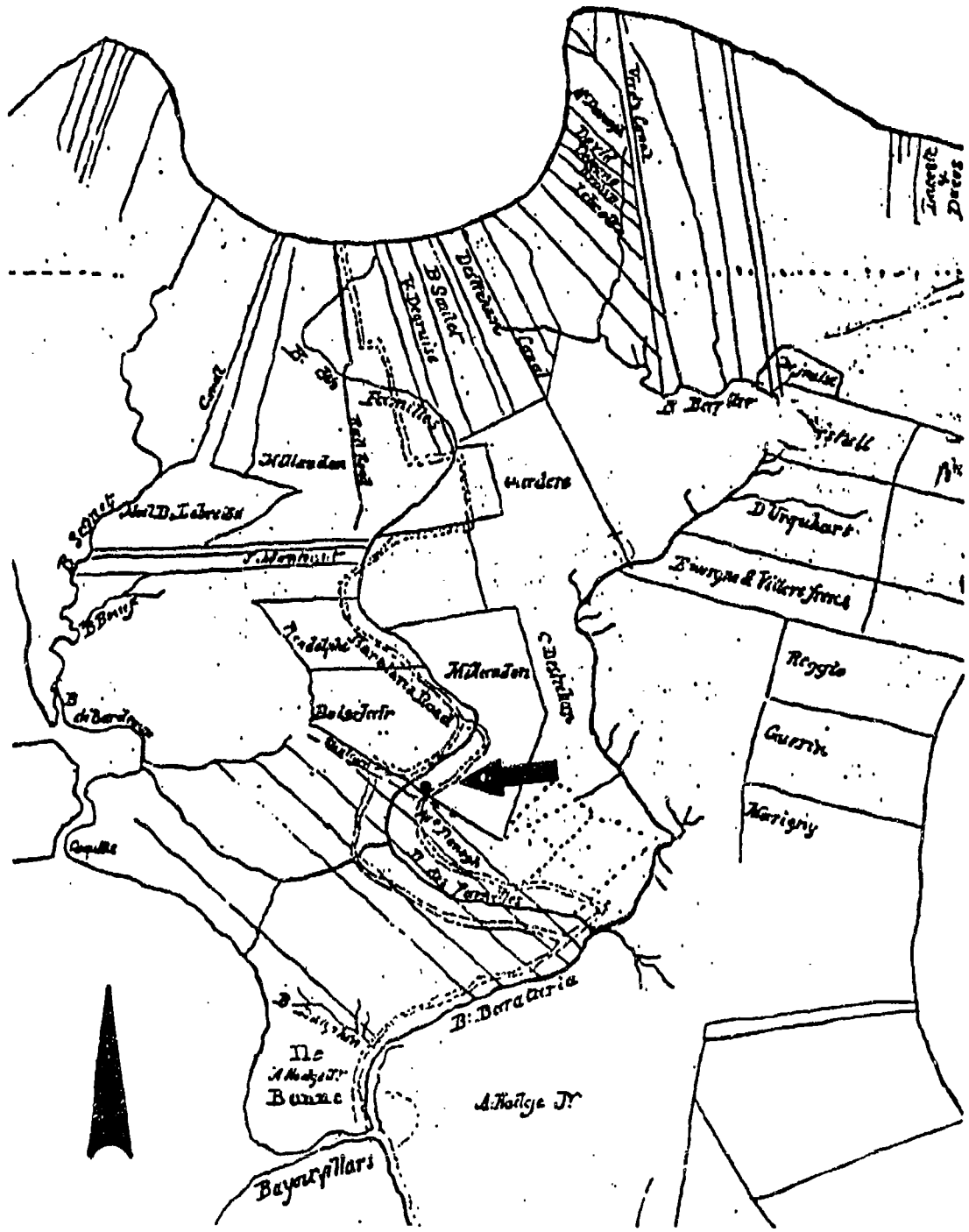


Figure 7. Map by M. H. Warner and R. P. Baker dated 1842, showing land ownership in the upper Barataria basin (from Kelley and Bryant 1986:19) The approximate location of 16JE223 is indicated by an arrow. No scale available.

from crevasses during several years in the antebellum period; 1850, 1852, and 1859 saw serious overflows that probably inundated the Estelle backlands (Goodwin et al. 1989:27, 33).

The Post-Civil War Period and Late Nineteenth Century

Laurent Millaudon sold his plantation to Henry C. Millaudon in 1869, and Henry Millaudon sold it to Amos B. Merrill in 1870. The Civil War had seriously disrupted the Louisiana sugar industry, and Merrill tried to revive sugar growing and processing on the plantation. The post-emancipation agricultural labor system took several years to stabilize, and Merrill used Chinese immigrant labor on his sugar plantation. Merrill hired about 140 Chinese laborers under a three-year contract, providing housing, rations, and wages of $14 per month. This experiment in alternative labor was a failure (Holmes 1986: 78-79). Merrill also established a narrow-gauge railway on the Estelle Plantation to convey the cane to the sugar house. These efforts by Merrill to make Estelle Plantation into a productive sugar plantation once again were not successful, and in 1872, Merrill sold the property to Oakes A. Ames (Goodwin et al. 1989:31, 35).

Ames managed to turn Estelle into a successful sugar plantation, despite a major crevasse that did widespread damage in 1891. By this date, many Barataria landowners had switched to rice cultivation (Holmes 1986:82, 94). Ames expanded the Estelle plantation railroad. In 1897, the Ames Plantation was sold to the Southside Plantation Company, of which Frank Ames was Treasurer. The Estelle property began to be subdivided into small truck farms (Goodwin et al. 1989:35). On July 15, 1899, Frank Ames contracted with Charles J. Brown, owner of neighboring Beauvais (also Beauvé) Plantation, later called Christmas Plantation, to extend the railway from Brown's Plantation to the Estelle sugar house and to process Brown's cane. This was a narrow-gauge railway, with tracks a mere one foot apart set on ties five feet long and with centers three feet apart (COB 21 Folio 317, JPCH). This was a very small railway, even for a sugar cane plantation. The road bed for the rails was to be laid to the east of and adjacent to the Barataria Road, and would have lain parallel to or congruent with the Old Barataria Road at the southeast edge of 16JE223. Documentation indicates that the railway roadbed was to be 690 feet from Bayou Des Familles at the upper boundary of Section 38 of T.15S R.23E (Swanson 1988:255), in immediate proximity to 16JE223. The position of the railway was depicted in a map annexed to a timber survey of 1901 in the New Orleans Notarial Archives (A.W. Cooper, March 25, 1902, NONA) which is now missing. The road bed of the railway was to be graded, but the impact on the landscape made by this minor railway was probably minimal. In fact, on March 26, 1902, when Charles J. Brown sold the railroad to the Southside Plantation Co., the contract stated that "the said railroad has been abandoned and is no longer operated by the Southside Plantation Co." (COB 21, Folio 317, JP). Within three years of its completion the railway was out of use and probably was quickly disassembled. The graded railbed may have been used as an alternate roadway of the Barataria Road once the route was cleared of rails.

Charles J. Brown purchased a number of failed, smaller plantations further down Bayou Des Familles. However, Brown was unable to profitably operate a sugar cane plantation here. There is no documentation available that Brown, his predecessors, or his successors attempted cane cultivation in the immediate vicinity of 16JE223. Sugar cane production had ceased on the Estelle Plantation by 1917 (Goodwin et al. 1989:35; Swanson 1991:140-141, 143). On August 5, 1918, the Southside Plantation Co. sold Estelle Plantation to the Ames Farm Land Co. (COB 43, Folio 394, JP).

Logging and lumbering had been important in the Barataria Basin since the French colonial period. However, pre-industrial logging methods were unable to fully exploit the timber resources of the cypress backswamps. In 1889, the pullboat was invented, and in 1892, the overhead cableway railroad skidder. These developments allowed cypress and other

species of trees to be logged in virtually any environment. Coincidental with a surge in national demand for lumber, the new technologies led to a boom in logging activity throughout Louisiana. So efficient were these logging methods that within a single generation, almost all virgin stands of cypress had been depleted in Louisiana, and by 1925, the industry was in major retraction (Mancil 1972:76-77, 82-85).

The Twentieth Century

The so-called "golden age" of cypress lumbering in Louisiana was a brief but intense episode of dramatic change in the cultural and natural geography of southern Louisiana. Characteristic of this industrial logging period was the purchase or lease of large swamp tracts by logging companies, who moved in with temporary support and processing facilities. The logging companies altered the landscape by building canals or railway embankments, and then removed virtually all trees of marketable size. Workers moved throughout the cypress region, residing in barracks or quarters boats while employed in a particular area, and then leaving when extraction on any tract had been completed. In the Barataria region, the logging industry evidently drew on a distinctly different labor pool than was the case in the large cypress reaches of the Atchafalaya Basin. In the eastern Atchafalaya Basin area, about one-third of the workers in the cypress logging industry were of Native American, African-American, or mixed heritage (Grace 1946:232), but in the Barataria region virtually all of the laborers were African-Americans who worked under white supervisors. A large logging camp might have 80 African-Americans and six whites. Much of the cypress and hardwood timber from the Barataria Basin was milled at the Louisiana Cypress Company, afterward the Rathborne Lumber Company, located on the Harvey Canal at the Mississippi River (Holmes 1986:108).

By 1925, virgin cypress stands were almost entirely depleted, and the large cypress mills went into decline. Smaller, portable mills became more prevalent (Holmes 1986:109). Portions of the Bayou Des Familles swamplands are known to have been logged at least twice in the first half of the twentieth century. However, in 1946, William Harvey Moynana and Emmett D. Brown purchased a tract that included Section 2 in Township 15S, Range 24E, and established a portable sawmill there, directly north of the present Lower Estelle Protection levee and about one-third of a mile from 16JE223. The sawmill was evidently no longer in operation after the early 1950s (Goodwin et al. 1989:35). It is possible that the immediate area around 16JE223 was logged during this period of activity at Brown's sawmill, between 1946 and the early 1950s. Among the largest examples of trees on the natural levee in proximity to 16JE223 are oaks of various species, approximately 50 to 70 years in age (Steve Finnegan, Landscape Architect, New Orleans District, U.S. Army Corps of Engineers, personal communication 1995). Forty to fifty years ago, these individual trees may not have been large enough to be attractive to commercial logging. The presence of trees of this age indicates that the area was probably last clear-cut prior to about 1925 and has not been cultivated since that date.

By the second decade of the twentieth century, the vicinity of the Barataria Unit of Jean Lafitte National Historical Park and Preserve had a considerably reduced population. Many of these Barataria residents were squatters engaging in extractive pursuits, such as hunting, fishing, and trapping for their livelihood. Demand for muskrat fur grew after 1900, and with the reduction of the alligator population in the Louisiana swamps, the number of muskrats available for trapping soared. Shrimping was done on a large scale in the Barataria Basin in the late-nineteenth and early-twentieth centuries. The stilt villages where the shrimpers lived and where shrimp were dried for export, were a characteristic feature of Barataria Bay. Oystering, crabbing, and moss collecting were other extractive activities that were pursued in the Barataria area on an extensive scale. In more recent decades, technological developments, particularly in water transportation, have had a substantial impact on these traditional undertakings (Holmes 1986:109-110, 116-121).

Small-scale farming on the natural levees continued in the Barataria Basin into recent decades. Efforts were also made to develop large-scale agricultural tracts on basin lands, but in many cases, drainage efforts have produced subsidence, making agriculture yet more difficult. Between 1930 and 1978, the number of farms in Jefferson Parish as a whole decreased by 63 percent, and this development was generally paralleled in the Barataria area. The average acreage of farms in Jefferson Parish increased during this same period, from 62 to 107 acres, but livestock raising supplanted vegetable farming as the principal agricultural activity (Holmes 1986:116).

Oil exploration and extraction has been a major component in the twentieth-century history of the Barataria Basin. In 1935, Texaco discovered the Lafitte Oil Field, and subsequently pipelines were extended from the field to the Mississippi River and to refineries at Grand Ecaille. The Barataria Oil Field was discovered in 1939, and the Lake Salvador and Delta Farms Fields in 1940. Numerous further, subsidiary fields have been opened in the half-century since the oil industry arrived in the Barataria Basin. In the developmental period, oil field workers lived in houseboats or oil field camps, and subsequently the towns of Lafitte, Barataria, and Crown Point grew as residential communities for oil field workers (Holmes 1986:122). At present, the Barataria Basin exhibits a diversity of characteristics, with natural features and land use patterns reflecting the survival of traditional ways of life in the area, and also the impact of modern developmental and industrial activities.

The Origin of Landscape Features Adjacent to 16JE223

The eighteenth-century *Camino Real*, later referred to as the Barataria Road or Old Barataria Road, lies to the southeast of 16JE223. The road was constructed to serve the *Isleño* settlers and remained in use into the twentieth century, although its condition and the frequency of its use seem to have been variable. Evidently, the road may have taken a number of parallel semi-circular courses and shortcuts below 16JE223 during its years of use. In the period 1803-1812, the road was good when dry and poor when wet, a common enough circumstance for unpaved roads. Jefferson Parish Police Jury ordinances promulgated in 1825 stipulated that the clearing for the Barataria Road was to be a total of eighty feet in width and ditched on either side (Swanson 1991:143-144). However, without more substantial grading and drainage efforts, the roadway was bound to remain difficult to travel on when wet. Cart and carriage traffic seems to have been frequent into the 1830s, but by the 1840s, the road seems to have deteriorated (Swanson 1988:242-244). In 1842-1843, the Barataria Public Road was established on the east bank following the old route of the *Camino Real*. This road also was evidently not properly maintained, and by 1865, it was in very poor condition. At this date, the Barataria Road was located 660 feet from the bank of Bayou Des Familles, where it crossed the upper corner of Section 38 of T.15S R.23E (Swanson 1988:245-246; Swanson 1991: 112-113, 146).

On the basis of several nineteenth-century maps, it is not at all clear whether the *Camino* in the vicinity of 16JE223 was congruent with the Barataria Road, or the Old Barataria Road, as it came to be called. However, since the *Camino* was likely built along the highest available route in proximity to Bayou Des Familles, the older roadway may have remained in use along this portion of its length. The roadway was unimproved; there is no conclusive documentation that the road in the vicinity of 16JE223 was ever heavily lain with shell, although shells were probably used as fill in spots. The route of the Barataria Road is shown on the 1891 USGS 15' quadrangle map of New Orleans (Kelley and Bryant 1986:24). This map indicates the Barataria Road crossing from the eastern bank of Bayou Des Familles to the western bank (from Section 2 of T15S R.23E to Section 3) above the contemporary location of the St. Joachim church. Thus, the portion of the Barataria Road in proximity to 16JE223 may have remained in use as an unimproved roadway well into the twentieth century. In very poor condition in the early part of this century, travelers made frequent alternative

roadbeds along the Barataria Road by detouring off the roadway to avoid impassable quagmires.

Portions of the Old Barataria Road on the eastern side of Bayou Des Familles were designated Louisiana Highway 30 during the 1920s. In 1930, the State of Louisiana purchased the right-of-way of what is now Louisiana Highway 45. This western road was also called Highway 30 and eventually replaced the unpaved eastern route; it was designated Louisiana Highway 45 in the 1950s (Swanson 1991:162-164). As a consequence of the poor condition of the Old Barataria Road on the eastern bank of Bayou des Familles, twentieth-century development on the east bank of Bayou Des Familles in the vicinity of the site has remained very limited.

The construction of the Lower Estelle Protection levee (or V-levee) and canal in the 1960s was the greatest alteration of the landscape in immediate proximity to 16JE223 made during the second half of the twentieth century. The canal was originally dug for oil exploration (Swanson 1988:303) and had been excavated by 1968. The small levee and ditch feature complex lying to the southeast of 16JE223 and perpendicular to the Protection levee also had some impact on the site vicinity. These features evidently were erected after the construction of the Protection levee. The 1945 and 1958 series aerial photographs of the Barataria region suggest that the Old Barataria Road was present as a track on the edge of 16JE223 at these dates. By the time the 1968 1:5000 scale aerial photographs were taken, the road was invisible beneath tree cover in the vicinity of 16JE223. Likewise, in 1972 aerial photographs, the Old Barataria Road is not visible where it would meet the V-Levee. However, in the 1977 series aerial photos the old roadway is traceable, and the 1978 infrared photographs show the ditch feature as present. The 1979 photorevision of the 1966 USGS Bertrandville, LA, quadrangle map indicates the route of the road, crossing the Lower Estelle Protection levee ditch and then following the course of the levee to Louisiana Highway 45 (Figure 8). There may have been a temporary bridge over the V-Levee canal at this point around 1979. It is clear from the 1983 series aerial photographs that the course of the Old Barataria Road had been made more obvious by this date, and that any bridge across the V-Levee at the Old Barataria Road had been removed. Evidently, in the period between 1972 and 1978, and probably between 1977 and 1978, the small levee and ditch complex lying to the immediate northwest of the Old Barataria Road (between 16JE223 and the road) was constructed. Archeological evidence indicates that the small levee had to have been constructed after 1964 (see Chapter 8). This agrees with interpretation of the map and photographic evidence.

The West Jefferson Levee District, the Jefferson Parish Drainage Department, and the Louisiana Department of Transportation and Development were all consulted regarding the date and the reason for construction of the ditch and levee feature complex. None of these agencies had records regarding this feature. The levee may have been constructed as a private undertaking, almost certainly to provide flood protection to the nearby housing developments. The levee and ditch are parallel or congruent with the historic *El Camino Real*, the Old Barataria Road, and the Beauvais-Christmas Plantation railway. Approximately 1.25 miles to the northeast of 16JE223, the ditch connects with a roadside drainage ditch near a contemporary area of development, at the location of the former WBOK radio tower.

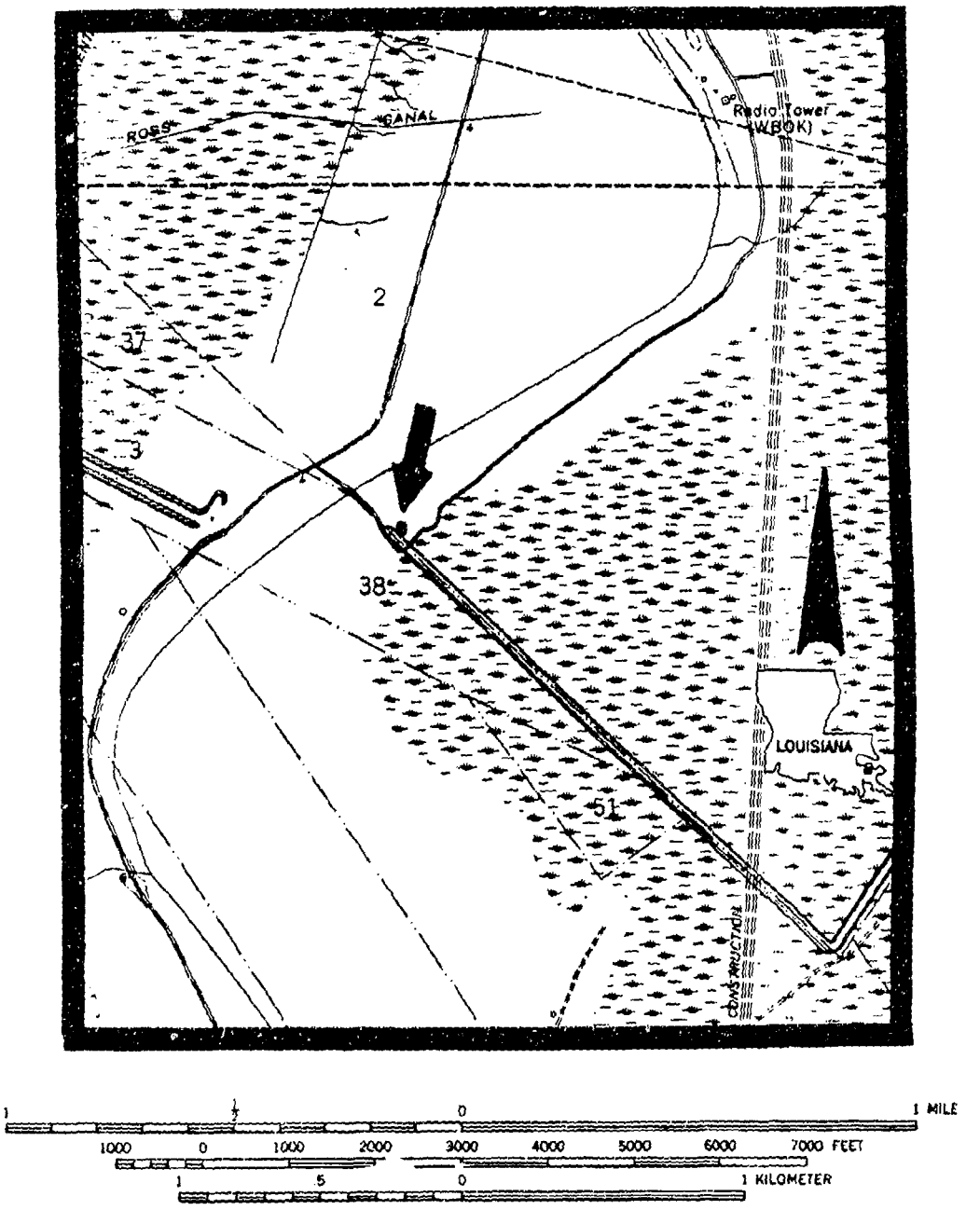


Figure 8. Excerpt from the Bertrandville, LA 7.5' quadrangle map (1966, photorevised 1972 and 1979) showing the Old Barataria Road. The location of 16JE223 is indicated.

CHAPTER 6
THE *POBLACIÓN DE BARATARIA*

The Context of the Canario Emigration to Louisiana

For over four centuries, the Canary Islands have been a major source of immigrants of Iberian descent to the Americas. Research suggests that approximately one-half of a million persons have emigrated to the Americas from the Canary Islands since 1500 (Parsons 1989:392). These immigrants have become known in the Americas as *Isleños*. Settlement of the Barataria region with *Isleño* families during 1778-1779 was only one episode in a long history of Canario emigration. Much of this emigration was sponsored by the Spanish government as a matter of royal colonial policy that itself continued for over three hundred years. Recent scholarship has provided a more detailed information on the recruitment of Canarios for emigration to Louisiana than was previously available and allows better interpretation of the experiences of these persons in the Barataria settlement.

Canario society in the eighteenth century reflected a multifaceted history and distinctive geographical circumstances. The Canary Islands are an archipelago located in the Atlantic Ocean off the western coast of North Africa, approximately 700 miles southwest of Gibraltar, between the 27th and 29th degrees of northern latitude and the 13th and 18th degrees of western longitude. The islands extend over an area of over three hundred marine miles from east to west. There are seven major islands in an eastern group and a western group. The eastern group is comprised of Gran Canaria, Fuerteventura, and Lanzarote. Of these, Fuerteventura and Lanzarote lie within 100 miles of the southern coast of Morocco. The western group consists of Tenerife, La Palma, La Gomera, and El Hierro. A map of the Canary Islands is presented in Figure 9.

The islands are volcanic in origin, generally consisting of central highlands descending relatively rapidly to the coast, with characteristically rich volcanic soils. The lack of plains requires that much of the agricultural land be terraced. The climate is subtropical, with little seasonal variation in temperature. The average January temperature on Gran Canaria is 16.2° C (62° F), and the average temperature in August is 23.7° C (71° F). There is, however, a strong contrast between annual precipitation on the northern and southern sides of the Canary islands. Annual precipitation rarely exceeds 10 inches on the southern sides, but can reach 30 inches per year on windward, northeastern portions of the islands (Vega 1974:5-6, 146; Din 1988: 2).

The climatic variation among the different regions of these islands had a significant impact on economic development following the conquest of the Islands in the fifteenth century. A consequence of the dramatic difference in precipitation on the northern and southern sides of the islands was that population and agricultural activity concentrated in the north. To a substantial degree, agricultural activity was also differentiated by zone of elevation. The coastal elevations from sea level to a range of 650 to 1300 feet have the lowest variation in temperature and an average annual precipitation of about eight to 19 inches. This zone is populated by plants characteristic of subtropical climates. Better-watered or irrigated agricultural tracts have in historic times supported bananas, oranges, coffee, dates, sugarcane, and tobacco. At elevations from 650 to 2400 feet, depending on location, the climate is more Mediterranean in character, and agriculture has concentrated on cereals, grapes, and, since the eighteenth century, potatoes. The larger islands, Tenerife, Gran Canaria, and La Palma, have elevations to 9,000 feet. Agriculture has not been practiced in this zone, and it is characterized by the remaining significant forest stands on the islands. Tenerife has an alpine region extending to an elevation of 12,000 feet (Din 1988:2).

Prior to the fifteenth century, the Canary Islands were inhabited by the *Guanches*, a people of Berberic origin. The *Guanches* were largely displaced by colonization from the Iberian peninsula after the fifteenth century. The islands of Lanzarote, Fuerteventura, El Hierro, and La Gomera were conquered by the Frenchman Jean Bethencourt at the beginning of the fifteenth century. Bethencourt did homage to Henry III, the King of Castile, and subsequently, in the mid-fifteenth century, Fernán Peraza established dominion over Fuerteventura, Lanzarote, La Gomera, and El Hierro through marriage. Peraza and his son, Guillèn Peraza de las Casas, undertook a series of campaigns to conquer Gran Canaria and Tenerife. These were not successful. Gran Canaria was brought to submission by Pedro de Vera in 1480 and Tenerife by Alonso Fernández de Lugo in 1496 (Vega 1974:10-16). The *conquistadores* who took control of Gran Canaria, Tenerife, and La Palma did so under the auspices of the Crown of Spain, and these were considered Royal islands. The *señorial* rights held by those noolemen who received lands distributed by Pedro de Vera on Gran Canaria and Alonso Fernández de Lugo on Tenerife and La Palma were distinct from the rights held by *señores* on Lanzarote, Fuerteventura, La Gomera, and El Hierro. The Counts of La Gomera, the descendants of Peraza, held these latter islands and had a more distinctively feudal administrative relationship with the Crown; consequently the *señores* had greater power, relative to their tenants, than on the royal islands (Din 1988:5-6; Rodriguez 1982:227-228). These political arrangements had an important impact on the development of Canario emigration to the Americas in general and to Louisiana in particular.

The population of the Canary Islands by the middle of the eighteenth century had developed pervasive and distinctive cultural characteristics. The population was overwhelmingly of Iberian descent, the *Guanches* having been virtually eliminated as a separate group and the remainder of their diminished population assimilated into the influx of settlers that came into the archipelago from the southern portions of the Iberian peninsula. A distinctive "constellation" (Parsons 1989:391) of folk traits has developed in Canario culture and has been identified in those areas of America that have received substantial influxes of *Isleño* settlers. These traits include elements of language and speech, peasant dress, dancing, music, domestic architecture, folk medicine, cooking and dietary preference, and religious observance (Parsons 1989:391-392). Analysis of Canario language and speech indicates that the dominant linguistic elements are Andalusian in origin, with an admixture of elements from Portuguese and Genoese (cf. Lipski 1990; Armistead 1992). A traditional dietary mainstay of the Canary Islanders is *gofio*, a grain porridge or gruel. On the islands, *gofio* was made of millet in the last third of the eighteenth century, but maize replaced millet as the principal ingredient in the Americas. In the mid-eighteenth century, a cultural export for which the Canary Islands were known in continental Europe was a distinctive dance, a variety of jig, called the Canary (Diderot 1751:587). The cult of the Virgin of Candeleria, *patrona* of the archipelago, dates to the fifteenth century and is a marker of *Isleño* settlement in New World locales (Parsons 1989:391-393).

Scholars have long contended that population pressure on the islands was the principal element of the large-scale emigration to Spanish America. However, this statement, while fundamentally correct, is not specific enough. In fact, the socioeconomic condition of the Canary Island had been in crisis for two generations prior to the Royal recruitment of soldier-settlers for Louisiana in 1778. The reasons for this extended state of socioeconomic crisis were the agricultural conditions on the archipelago and the rigidity of the ruling *señorial* class in the face of a structural failure of the economy (Pérez and Suárez 1992:38-41).

From early in the sixteenth century, the economy of the Canaries became dominated by commercial export agriculture. The wetter islands began to grow sugarcane, and the Canaries became not only exporters of sugar to Spain and Europe but also exporters of cane-growing and processing methods to Spanish possessions in the Caribbean and Central and South America (Parsons 1989:390-391). The export economy of the islands became somewhat more

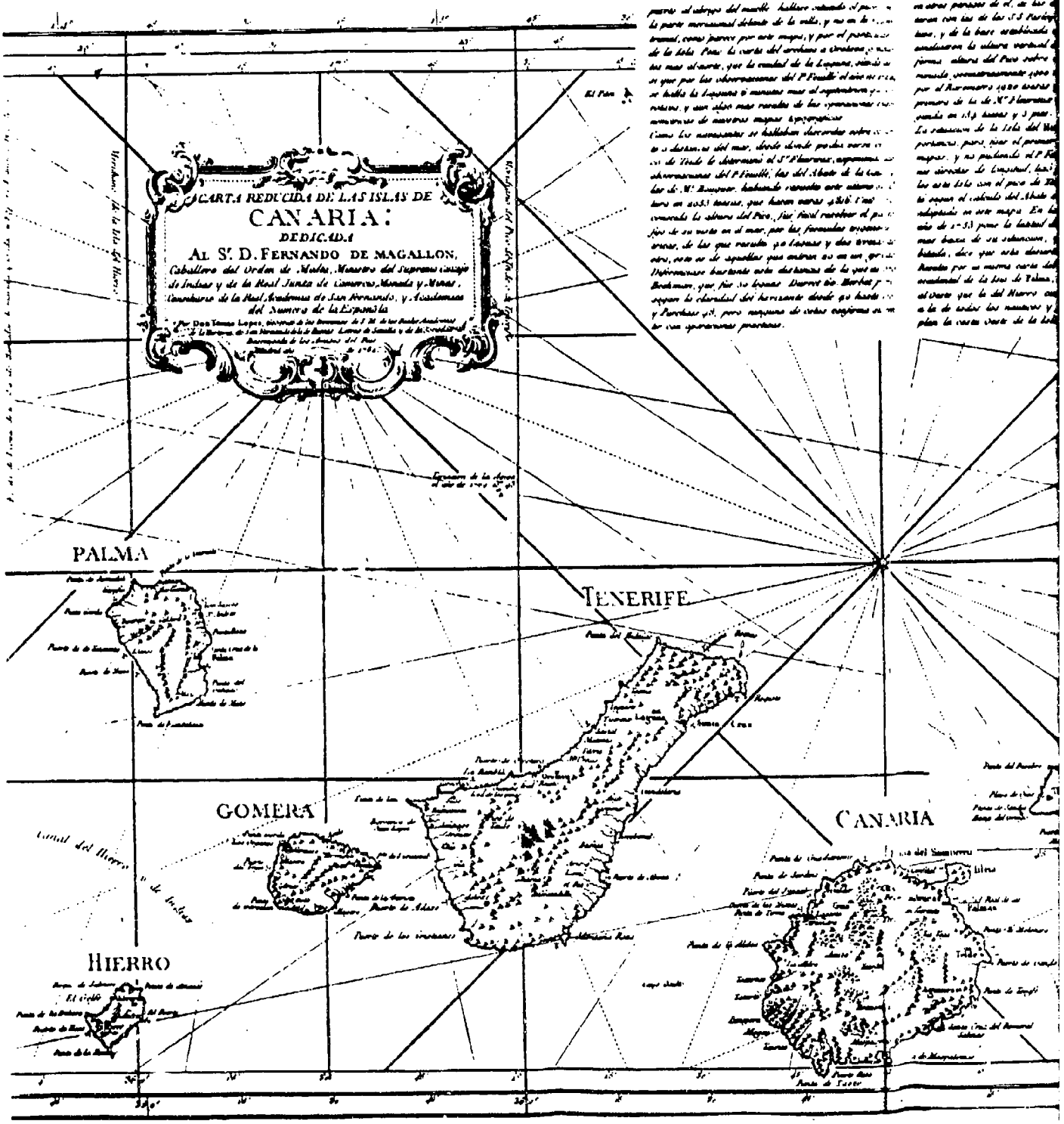
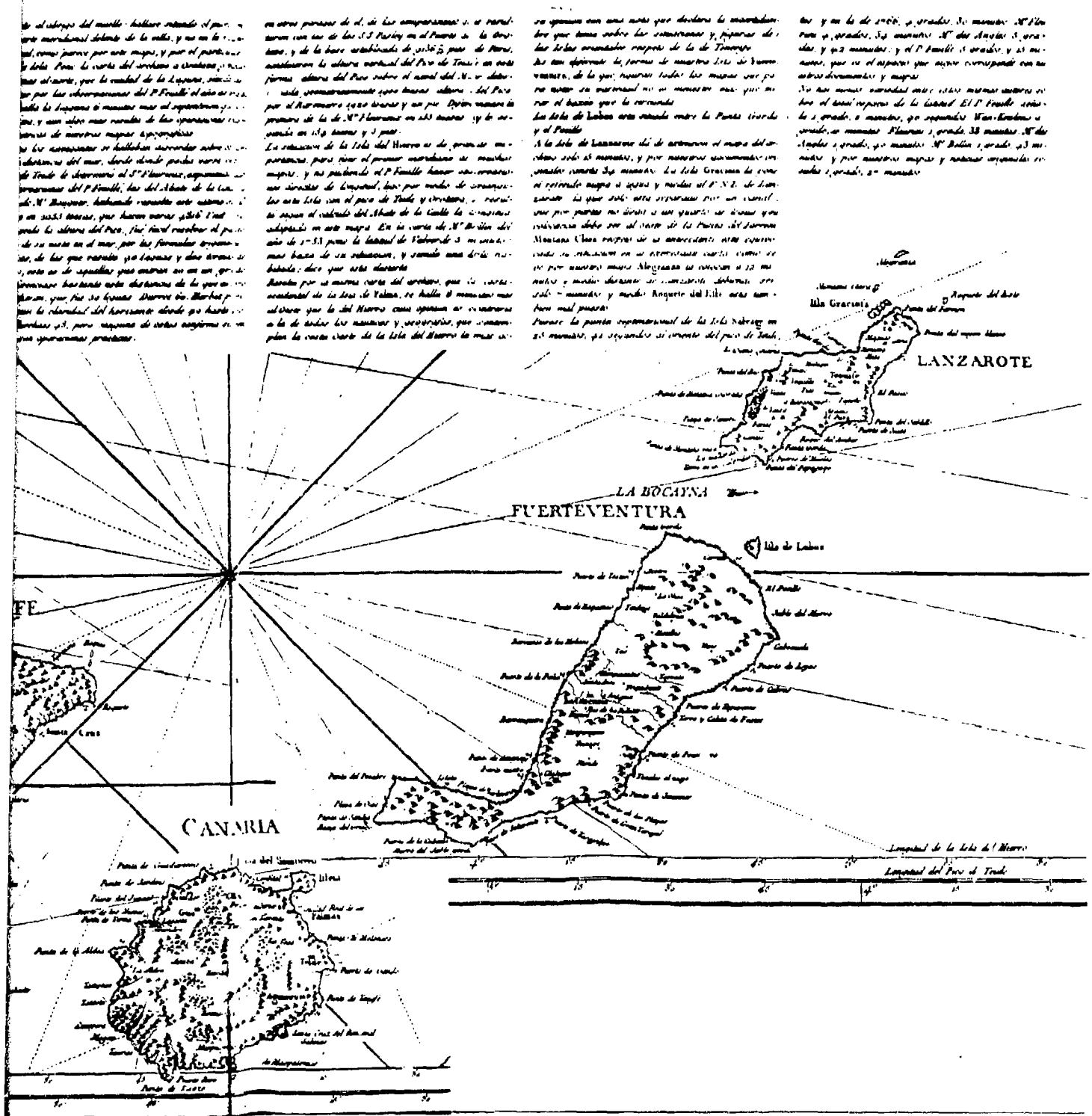


Figure 9. *Carta Reducia De Las Islas De Canaria*, by Don T
(from Padrón 1988, frontispiece).



ducia De Las Islas De Canaria, by Don Tomas Lopez, Madrid, 1780
frontispiece).

diversified during the sixteenth century; provisioning of ships bound for the New World and the export of wine, cereals, and fruits to England became prominent. During the seventeenth century the English wine market became paramount in the Canary economy (Din 1988:7-8). The warmth and evenness of the climate, more than the level of rainfall, was suitable for the production of many fruits, particularly citrus fruits and grapes Peter Lindeström, a Swede, visited the Canaries in 1654 and described the principal products of the islands:

> [On Gran Canaria grow]...oranges, lemons, sweet oranges, potatoes, bananas, Canary sugar, syrup, Canary wine, tobacco... it is difficult to enumerate all of the good things that grow in this country... In the evening the Spanish Governor...invited us [to] the palace for dinner the next day, not to any such food as meat, fish, bread or such, but only to a hundred courses of mere sweetmeats of the fruits that grow there, also several kinds of wines...[the] Governor said: "Well, these 100 kinds of fruit I have offered you are the principal kinds of fruit, which grow here in the country; but if I should also have the common ones prepared, which grow here in the country, I could undoubtedly double the number of dishes of only fruit."... [they export] planks and boards, such as resemble cedar and cypress, of which fine, valuable cupboards, tables, chests, caskets, boxes, drawers and such are made. These trees, which have a natural red color and fine odor, grow there in great abundance. After they are sawed, large quantities are shipped to other nations and countries... sugar cane [is] planted on these islands, which annually brings a great benefit and indescribable revenues from foreign countries in trade and in exchange for other merchandise. This Canary sugar is the most exquisite in taste and far surpasses that which is raised in Sicily and Cypro. Concerning the grapes... the vines were taken from Candia, which are planted on these islands and grow so abundantly, that the vines produce more grapes than leaves and many of the bunches are found to be four palms long, which are pressed, on these Islands, and made into Canary wine and many other kinds of splendid wine beverages. In these said Islands are pigeons, wild peacocks, parrots, wild hogs, and other strange animals in great abundance; also canary birds which were formerly in plenty, before the arrival of any people... Great Canary... [has] become so much more fertile and valuable, since [it has] been entirely and completely settled and cultivated, through the industry of the Spaniards... in spite of all expenses, so that at the time I was there, as stated above, there was then thousands of times greater blessings [there than in other places] of all kinds of rare fruits, trees, herbs, and roots; of animals, such as camels, asses and all kinds of cattle; but horses are not found there... The inhabitants on Teneriffa, and adjacent parts, eat rye-bread, meat and preparations with milk; they have particularly many goats, camels and asses, and great number of fig trees, which grow there. But no wine [is produced], nor wheat, nor are horses used there [Lindeström 1979:45-47, 138-139, 140, *sic* throughout].

Commercial monoculture was firmly established on the Canary Islands by the seventeenth century, although sugar declined in importance relative to two other forms of commercial agriculture, viticulture and the raising of *orchilla*, a dyestuff. Viticulture and wine production were especially important to Tenerife and La Palma. The consequences of commercial developments in the eighteenth century would affect the grape- and wine-producing islands very heavily. The English wine market had become crucial to grape growers on the Canaries and became largely inaccessible during the War of the Spanish Succession (1702-1713). Despite smuggling during the war and re-establishment of the wine trade at its conclusion, the competitive position of the Canary Island wine producers was damaged. As a result of the Anglo-Spanish War of 1739-1748, the Canaries lost virtually the entire English wine market to Portuguese competition (Pérez and Suárez 1992:37-39; Din 1988:8-9).

The consequences of the collapse of the wine trade were profoundly disruptive on Tenerife and La Palma. The situation was somewhat less critical on El Hierro. Although La Gomera produced different products, it suffered as much from its reliance on commercial monoculture as did Tenerife and la Palma. On La Gomera, production of *orchilla* or *oricelo*, a dyestuff with erratic harvest levels and subject to speculative market forces, was of primary importance. Cultivation of this crop occupied large amounts of productive land owned by the landlord class and provided employment, or caused underemployment, for tenants and wage laborers. Silk was also a significant product of La Gomera by the mid-eighteenth century. In the areas of concentrated monoculture, there was persistent underproduction of foodstuffs, requiring imports of grain and causing frequent subsistence crises when market forces or poor harvests depressed exports. The islands of Gran Canaria, Fuerteventura, and Lanzarote had economies that remained more diversified, and that were relatively less affected by the eighteenth-century socioeconomic crisis that traumatized the Canaries in general (Pérez and Suárez 1992:37-38).

A Spanish observer, writing almost exactly a century after Lindeström, described in glowing terms a similarly productive pastoral economy on the Canaries, ignoring the dislocation already produced by the collapse of the wine trade with England:

> There is an abundance of wheat, barley, honey, wax, sugar, palms, pomegranates, lemons, oranges, dragon's blood, pitch, cheese, game, birds, fish, rabbits, horses, donkeys, mules, oxen, cows, sheep, goats, pigs, and camels... They have an abundance of excellent wine, called *Malvasia*... they have an herb, named *oricelo*, with which they dye cloth a carnelian color [Velarde 1752:233-234].

The mention of horses, presumably draft horses, had been noticeably absent a century before and could be indicative of the introduction of more advanced agricultural practices. Tenerfeños were known for their utilization of oxen in cultivation, rather than horses and mules (Hyland and Fernandez 1994:9).

An almost unbroken string of natural disasters of biblical proportions struck the Canaries in the third quarter of the eighteenth century. In 1755, 1757, 1761, and 1762, swarms of locusts from Africa descended on the islands. In addition, droughts and crop failures added to the prevalence of epidemics and famine. On La Gomera, the *señores* had established a system of tenancy that, in practice, forced the population to produce *orchilla* to the neglect of foodstuffs. In the period 1760-1765, 75 percent of *señorial* rents on Gomera were derived from *orchilla* production. But the market for *orchilla* was subject to speculation and instability. In 1762, civil unrest boiled over on Gomera as a result of famine, and as of 1775, the island's trade deficit made life for the population extremely difficult (Rodriguez 1982:228-230, 236). A list of exports from Gomera for the year 1775 provides a detailed picture of the production of agricultural goods and manufactures on that island (Table 3). Apparently *orchilla* exports are not listed in this Customs account. The quantities involved in this list are not very great, except perhaps for sheep and silk. Notably, the export of cereals is relatively low, with the exception of wheat. This may be indicative of a moderately good cereal crop on this island this particular year. However, the imports to La Gomera more than offset the exports from the island in value. The Customs account shows imports of quantities of oil, lard, and even wheat, plus large amounts of textiles, iron, steel, and munitions (Rodriguez 1982:231, 247).

Table 3. Accounts of the Customs of La Gomera, 1775 (Rodriguez 1982:246).

Exports:

Livestock	**Heads**
Goats	10
Sheep	270
Castraaos [male sheep]	363
Lambs	64
Kids	16
Beasts [?]	4
Yearling lambs	85
Oxen	29
Donkeys	7
Young bulls	1
Cattle	49
Calves	1
Cows	16
Total	**915**

Agricultural Products	
Barley	18 f. [*fanegas*, sacks]
Peas	9 f. 6 c.
Kidney beans	3 f. 11 c.
Lentils	1 f.
Pimientos	5 f. 11 c.
Silk	1,497 lbs.
Wheat	196 f.
Wine	1 ½ pipes

Various	
Herrings	1 barrel
Wax	106 lbs.
Honey	7 jugs

Manufactured Products	
Raw brandy	13 pipes
Blue cloth	1 bolt
Stockings	6 pairs
Shawls	12
Royal dishes	2 pieces
Coarse hats	12

Tenerife suffered less during the eighteenth century than some of the drier islands, but poor harvests in 1774 and 1778 brought significant mortality increases. The decline of the wine trade forced a greater emphasis on subsistence crop production, and over the course of the eighteenth century, new crops were adopted by the islands. Cereal grains, wheat, barley, and rye, were the traditional mainstays of the Canary diet until the eighteenth century. The decline of viticulture during the century was accompanied by an increase in potato production in these climatic zones. After mid-century, millet became a significant proportion of grain production (Pérez and Suárez 1992). Potatoes, maize, and millet had not been mentioned as products of the Canaries by Velarde (quoted above) in 1752. Recently, authorities have pinpointed the mid-1770s as the time of experimentation with new food crops (Pérez and Suárez 1992:46), most importantly potatoes and maize. Alexander Humboldt visited Tenerife in 1799 and observed that maize had become more important to subsistence agriculture than wheat or barley, to the considerable improvement of health on the island (Parsons 1989:412). Nevertheless, a French visitor to Tenerife in 1801 commented at length on the impoverished, degraded, and sickly population:

> ...The venereal disease and the itch are very prevalent maladies... The elephantiasis... sometimes occurs in this island; a species of the itch termed by the natives *sarna*, is also endemic among them, but which, through an absurd prejudice, they never attempt to cure... Spain, it should seem, so far from deriving any advantage from the Canary islands, which, both by their position and fertility, might be rendered extremely profitable to the mother country, is on the contrary, at a considerable expense in retaining them.
>
> Tenerife produces less grain than the other islands, but much more wine, a part of which is consumed on the spot. Besides wine, the island also exports a considerable quantity of brandy, figs, dried raisins, oranges, citrons, and small white French beans, of an excellent quality, and of which they reap two harvests annually... but Saint-Croix [Santa Cruz] is filled with the vilest rabble; half its inhabitants almost naked, or covered with rags, wound[ing] the feelings of the passengers by the indecency of their manners; unfortunate females [i.e., prostitutes] constantly perambulate the streets, and the monks frequent the taverns... [Bory de St. Vincent 1805:15, 30]

This stark image of what Lindeström had hailed, a century and a half before, as the "Fortunate Islands; that is the most fertile and prosperous islands" (Lindeström 1979:139), clearly represented the effects of an extended socioeconomic crisis lasting over a full century. The crisis was precipitated by an economy and society that could not respond flexibly enough to change in the context of commercial relations it had developed over the sixteenth and seventeenth centuries.

The Spanish Crown was somewhat aware that mercantile policies were aggravating the structural problems in the colonial commercial system. The Casa de Contratación was forced to open trade between the Canaries and the New World colonies in the latter part of the sixteenth century because of the inability of Seville to supply them effectively. However, these regulatory measures were eventually a far greater hindrance to the Canarian economy than they were a help. Canary Island merchants were not above evading regulation when possible, but the total economic effect of contraband trade was small. In 1718, a new *Reglamento* concerning colonial commerce was promulgated that allocated the whole of the Canary Islands a mere 1,000 tons of cargo annually, to only certain American ports (Parsons 1989:399-400). These new measures were clearly restrictive to the potential for trade, and were widely unpopular among interested parties in the Canaries, including landlords and the nascent bourgeoisie. Smuggling to Europe and the Americas continued but illicit trade could not substitute for a lack of significant liberalization.

By the mid-eighteenth century, the obstinate reliance on commercial monoculture had caused the archipelago's economy to suffer "a process of extroversion and disarticulation" (Pérez and Suárez 1992:47) that resulted in poverty and suffering. The major structural flaw in the economy of the whole archipelago was the concentration on unreliably profitable commercial crops at the expense of underproduction of foodstuffs. Most of the islands were consistently in a situation of having to import foodstuffs, frequently causing net trade deficits and fiscal crises. This circumstance has already been mentioned as seriously affecting La Gomera in the period immediately preceding the recruitment for Louisiana in 1778-1779. Only Gran Canaria was able to maintain a semblance of balance between production and demand for foodstuffs, and it failed to achieve self-sufficiency in poor crop years. Other islands staggered from crisis to crisis. The situation became sufficiently acute on La Gomera for civil unrest to erupt in 1742 and again in 1762. In the 1762 uprising, a coalition of commoners consisting of ship captains, priests, Dominican monks, some magistrates, and other men of the middling orders rose against the powerful nobles dominating the island. They demanded an end to the *señorial* regime and the establishment of royal administration of the island; the opening of mountain lands, held by the nobles, for cultivation; the increase of cereal production, and the higher taxation of nobles and the re-circulation of the funds on the island (Rodriguez 1982:234-238; Din 1988:8-9). Despite the course of the "Bourbon Reforms" in Spain, the Royal Government regressively sided with the *señorial* landholders, and both revolts were crushed. Substantial trade reforms did not occur until the reign of Carlos III, in 1778 (Pérez and Suárez 1992:46). La Gomera eventually contributed more than 200 persons to the Louisiana recruitment.

At the same time that the conversion from a near complete reliance on commercial monoculture was proving agonizingly slow, the Canario population demonstrated a remarkable growth rate, significantly higher than that of the Iberian peninsula. Recent studies utilizing relatively reliable census returns for the Canary Islands have indicated that between 1688 and 1802, the net population of the archipelago grew at a mean annual rate of .54 percent, while Spain's population grew at a mean annual rate of .43 percent (Pérez and Suárez 1992:43). The rate of natural increase on the Canaries was, however, considerably higher, perhaps approaching 2 percent per annum, since during this period there were droughts, famines, plagues of locusts, epidemics, levies of troops by the Crown, international warfare, and large-scale emigration affecting net population growth.

In general, all of the islands experienced an overall decline in mortality and an increase in the rate of marriages and births during the eighteenth century, despite the disasters mentioned above. However, there were insular and temporal variation in population growth among the several islands. Until the middle of the century, Tenerife had the highest population with the lowest rate of increase. Gran Canaria, Lanzarote, and La Gomera grew most rapidly, while Fuerteventura and La Palma stagnated. After mid-century, the populations on Lanzarote and La Gomera increased the most rapidly, followed by Tenerife. Gran Canaria had a stable population during this period. Overall, the western islands, principally Tenerife, grew the most, and Lanzarote and Fuerteventura grew more than Gran Canaria (Pérez and Suárez 1992:43-44). On individual islands and in smaller districts, the change in population one way or the other could be quite dramatic. For example, La Laguna on Tenerife during the period 1755-1787 suffered not from overpopulation but from depopulation. La Laguna had a population of 9,139 inhabitants in 1755. This number had declined to 8,796 by 1769, and there were only 7,222 inhabitants in 1787. Notably, the latter census total reflects the fact that no families from Laguna were recruited for settlement in Louisiana in 1778. In some cases, indigents traveled between islands in times of severe unemployment and famine, seeking relief, only to escalate the mortality statistics of other localities. The total population of the archipelago in 1776 was 37,170 persons (Din 1988:9; Pérez and Suárez 1992:132).

It is apparent that the statistical profile of the Canario population, and more profoundly, the culture and society of the islands, were very heavily affected by emigration, the major "pressure relief valve" available to the population during the extended socioeconomic crisis. In the years 1770 to 1808, an estimated 2,000 Canarios migrated to the Americas per year, representing a drain, every twelve months, of approximately 1.3 percent of the archipelago's population (Parsons 1989:412). The recruitment for Louisiana, consisting of approximately 2,000 persons, therefore represents less than 5 percent of the total Canario emigration in the last third of the eighteenth century alone.

Canario emigration to the Americas, private, illicit, or officially sponsored, had been going on for two and one-half centuries before the Louisiana recruitment began. Nor did the Louisiana represent the largest locus of Canario settlement in Spanish dominions. Specific recruitment of Canarios for settlement in America began in 1533, and for service as soldiers, in 1535. Emigration to America from the Canaries accelerated in the second half of the sixteenth century, and remained high in the seventeenth century. From the late-seventeenth century onward, the Spanish Crown sought to more actively encourage emigration from the Canaries to settle portions of her New World dominions that were underpopulated. Although the numbers of official Canario emigrants never attained levels desired by the Spanish Crown, major populations were established in the Greater Antilles on Santo Domingo, Puerto Rico, and Cuba. In Central and North America, Campeche (Mexico) received 28 *Isleño* families in 1681 and an unknown number subsequently; Villa de Bacalar (Yucatan) received 149 settlers in the period 1733-1735; the future San Antonio, Texas, received 56 *Isleños* in 1730; St. Augustine received 707 *Isleños* in 1757-1761; 24 Canario families were recruited in 1777 for settlement in Cuba; and 306 Canary Islanders were settled on the Miskito Coast of Honduras in 1789. The largest number of Canarios going to mainland areas of the New World established themselves on the coast of Venezuela, and after 1726, in the area of Montevideo in Uruguay. In the first half of the eighteenth century, *Isleño* immigrants and their descendants constituted at least 17 percent of the total population of Caracas; proportionally, there were three times as many *Isleños* in Caracas as there were members of any other immigrant group. The inhabitants of Venezuela who were of Canario origin or descent may have reached 50 percent of the total population in the eighteenth century. The nineteenth-century wars of independence in Spain's American dominions disrupted the flow of Canario emigrants, although subsequently Cuba and Puerto Rico received large influxes (Parsons 1989:? 6-414; Pérez and Suárez 1992:85).

Significant numbers of Canarios were recruited in the seventeenth and eighteenth century for service in military regiments and garrisons in the Spanish Americas. The Spanish troops sent to America in the eighteenth century

> ...were usually the destitute and the depraved: hapless vagabonds, criminals sentenced to the army, or captured deserters. Eager to export crime and disorder, the crown customarily deployed its most wretched regiments in America, going so far as to complete their complements with malefactors transferred from other units [Kuethe 1986:88-89].

For the enlisted ranks in the Spanish army in America, life was dull, dangerous, and provided little if any opportunity for material gain. As was often the case in colonial military service, disease rather than warfare was a greater danger to life. Malaria and yellow fever ravaged European troops upon their arrival in the tropics and subtropics of Spanish America, and the virulence of these epidemics could produce a mortality rate of 85 percent in a matter of months after debarkation in the Caribbean colonies (McNeil 1986:27-29). In this regard, at least, Canario recruits may have had an advantage over natives of the Iberian peninsula; malaria has been endemic in the Canary Islands in modern times (Boyd 1949:425-426) and Canarios in the eighteenth century may have had some immunity to this disease. In the balance, voluntary

military service in the colonies was usually a resort of the desperate. Enlisted personnel in the Spanish colonial army and their daily life were, in short, "miserable" (Kuethe 1986:88).

The Recruitment for the Battalions of Louisiana, 1775-1778

The Spanish government maintained a recruiting party in the Canary Islands during the Seven Years' War, from 1753 to 1762. After the Treaty of Paris, the recruiting of regular army troops on the islands was discontinued. However, in 1766, the Crown conducted a "levy of vagrants" on the Canaries, which was an example of the typical form of army conscription in use in eighteenth-century Spain. The regulations for the levies defined the "vagrants" and "idlers" to be conscripted as those

> ...without purpose or work... without some trade; that cannot pay rent or are without goods to live... that sleep in the streets, are badly amused in gambling, in wine cellars, taverns, or promenades, without some known application... [quoted in Pérez and Suárez 1992:58]

A problem for the Canary Islands population during the implementation of the levies was that it was difficult to tell habitual vagrants from marginal workers and day laborers who were merely temporary victims of the boom-or-bust cycles of the monoculture economy. The regulations required at least three witness' testimony as to the status of the potential conscript, but certainly there were mistakes or abuses in the system. Sailors on Canarian ships and ashore on the islands were another object of levies. Given the harshness of military life in the second half of the eighteenth century, it was perhaps fortunate for the underemployed classes on the Canaries that the levies were inefficient and never able to attain the goals set them by the government in Spain. On the other hand, the levies did remove, in a haphazard fashion, some percentage of the least-productive elements of an underemployed work force (Pérez and Suárez 1992:63-64).

In October 1775, the Spanish Crown evidently decided to conduct another levy in the Canaries, raising a battalion of infantry (Kuethe 1986:95; Pérez and Suárez 1992:55). Within two years, Spanish policy-makers had decided to conduct a large *reclutamiento* or voluntary recruitment on the islands in addition to the levy.

The reasons for this decision were twofold. Primarily, the Crown was concerned that manpower shortages in the colonial regiments and garrisons were reaching a critical stage. This was particularly the case in Cuba, Mexico, and the Crown's recent accession, Louisiana. Secondarily, the vast Louisiana colony was largely unpeopled, and the populated region around New Orleans was dangerously close to the British territory of West Florida. In general, Spanish strategic planners found Louisiana to be a headache, with a discontented French Creole population, and difficult to defend. An increase in the number of troops stationed in the colony was a necessity. The levying of a battalion of regular army troops in the Canary Islands seems to have been the initial response to the troop shortage in the colonies. It appears that the levy ordered in 1775 was followed by the recruitment of a second battalion of men, preferably with families, to be established in settlements at a number of points in Louisiana and on the Florida Gulf Coast (Pérez and Suárez 1992:116). This policy would serve to strengthen the military resources of Louisiana while also increasing the Spanish population of the formerly French colony.

The particular recruitment that eventually settled Barataria sought married men with families, as had several previous efforts (mentioned above) to provide settlers in the Antilles and on the mainland colonies of Spanish America. These married men were not supposed to be the vagabonds and hopeless dregs of society that were typically levied into Spanish colonial military service, although, as will be discussed in greater detail below, they were overwhelm-

ingly landless laborers of the class suffering most drastically from the economic dislocation in the archipelago. There is no doubt that many otherwise honest family men on the Canaries had become pauperized, and were reduced to marginal economic activities such as charcoal burning, or even to larceny. Widespread unrest simmered on the islands in the immediate context of the recruitment. A popular revolt, demanding redistribution of agricultural land, occurred in El Aldea on Tenerife in 1777 (Pérez and Suárez 1992:118).

In this context of crisis, Matías Gálvez, *comandante* of the Canary Islands and brother of Bernardo Gálvez, governor of Louisiana, directed a letter to the Cabildo of Tenerife, describing the attractiveness of Louisiana for the soldier-settlers in a typical example of propaganda encouraging emigration:

> ...[they will be posted in] a territory of Louisiana, rich, fertile, watered with an infinity of navigable rivers that empty into the sea, and are, by consequence, susceptible to vast agriculture and commerce; the indigo, of a quality inferior to that of Guatemala, superior to that of Caracas; the cotton, very good, although somewhat short; the sugar canes for molasses; the rice of a superior quality, the corn, masts, spars, and lumber, are the products of lower Louisiana.
>
> ...the wheat, capable of supplying, with time, our Islands; the tobacco equal to that of Virginia; the maize, barley, salt meats, the rich and abundant furs, the mines of lead on the surface of the ground, are those [products] of upper Louisiana...[quoted in Pérez and Suárez 1992:115-116]

On October 18, 1777, a royal order of Carlos III dated August 15 arrived at the port of Santa Cruz, Tenerife,

> ...to complete the Battalion of Infantry of Louisiana of its complement of men, and to form the Second Battalion... It serves His Majesty to grant the corresponding commission to Don Mathías Gálvez, the King's Lieutenant of these Islands, for that recruitment of men for the above-mentioned work...[quoted in Pérez and Suárez 1992:116].

Gálvez almost immediately encountered resistance from some of the institutions on the islands whose cooperation would be required for the recruitment. The Cabildo of La Laguna raised objection to the recruitment on November 12, 1777 (Din 1988:15). The *Síndico Personero* of Tenerife, one of the principal administrative functionaries on the island, complained directly to the Crown that the recruitment was a means to enrich the Gálvez family, since José Gálvez controlled the Council of the Indies, Bernardo Gálvez was the governor of Louisiana, and Matías Gálvez was to be in charge of the recruitment. Furthermore, the *Síndico* complained, the islands were in a state of underpopulation and the King's recruitment would seriously harm them. As was mentioned above, some localities were in fact experiencing depopulation despite the high birth rate on the islands as a whole. The authorities on the islands who complained to the Crown about the recruitment and drain of population worried, among other things, about the defense of the islands. The Canaries had been raided by British Naval vessels in both the Anglo-Spanish war of 1739-1742 and in the Seven Years' War. In several places such as Abona and Adeje on Tenerife, authorities contended that emigration and recruitment for colonial regiments made it impossible to maintain enough able-bodied men in the militia to effectively defend the security of the island (Pérez and Suárez 1992:126). The *Síndico* complained of depopulation when the Crown ordered a levy of 24 families for settlement in Cuba, also in 1777. The protests of the Síndico concurred with the position of an interest group of the landed class on the islands, reassuringly titled "The Royal Economic Society of the Friends of Peace". This body argued that the recruitment would have negative repercussions on agriculture and manufactures of the islands, obviously in the interest of keeping labor costs on the

islands low. However, the centralized power of the Crown was able to mandate the recruitment and cooperation of the cabildos on the royal islands of Tenerife, Gran Canaria, and La Palma, but on only some of the islands under the Count of La Gomera, where *señorial* privileges were greater (Pérez and Suárez 1992:118).

The recruitment was to be conducted under instructions established by Matías Galvez. The requirements for recruits were extensive:

> No recruit that is less than 17 or more than 36 will be accepted, and will be obligated to pledge for at least eight years... will be of height, at least five feet six *lineas* [5 feet ½ inch], of the robust and good disposition required for hard work, without notable imperfection in their person, free of accidents, habits, and other incurable conditions and without indecorous vices, nor of infamous extraction as a mulatto, Gypsy, executioner, or butcher by trade, or having been chastised as penalty or marked by the police...[quoted in Pérez and Suárez 1992:119]

The officials of the recruitment were to complete a series of forms, the first thoroughly describing the enlistee. Gálvez, in his instructions, gave evidence of being an administrator who cared to leave little to the imagination of his subordinates:

> Form No. 1
> Regiment of Infantry of Louisiana in New Orleans
>
> *Such and such* [*Fulano de tal*], son of *Such and such* and *Such and such*, native of these parts, dependent of *Such and such* Magistracy, Island of *Such and such*, Diocese of *Such and such*, residing in the village corresponding to that stated, or *Such and such* Magistracy, a *bachelor*: His trade is *such and such*, his age, *17 years or more*. His religion, *Roman Catholic*; his distinguishing characteristics are, his hair and eyes, *of such and such color, such as brownish, black, chestnut, blue*. His complexion, *swarthy, or whatever they have*. Nose, *of such and such character, such as regular, aquiline, roman, sharp, perfect*. Vanvilanpiño o zedrado [?] beard, *of such and such color, a scar meeting the nose, at the hairline, or middle of the forehead, or on the left cheek, a mole in such and such part of the face...* to enlist for eight or more years in *such and such place*, and *such and such month* and *year...* receiving so many *reales de vellon* at enlistment... witnessed by *Such and such*, Chief and Sergeant, and *Such and such*, Chief of Regiment of Militia. *Such and such*, the Commissioned Official, places his signature in the preferred place [quoted in Pérez and Suárez 1992:120].

Presumably the thorough description provided in this form would assist in any effort to apprehend future deserters. The second form contained the name of the official performing the recruitment, his position, and the city of recruitment, with the names of the *Alcalde* under whose authority the recruitment had been placed. On the third form it was noted that the recruit enrolled voluntarily, the date of his enlistment, the amount of the bounty he received upon enlistment, and an affidavit that the recruit had been informed of military ordinances and the penalties for desertion. Three copies of the forms were made. The bounty paid the recruits was ninety *reales de vellón* (11¼ *pesos*), one-half paid at enlistment and the remainder paid at the arrival of the recruit at La Laguna on Tenerife, the administrative capital of the islands. The soldiers received pay at the rate of four *reales de vellón* per day, paid twice monthly. Furthermore, they were given an allowance of two *reales de vellón* for food, and most importantly, the promise of land upon arrival in Louisiana. The distribution of land was

the major motivating factor behind the voluntary enlistment of recruits in the battalions of Louisiana (Pérez and Suárez 1992:115, 120-121).

The recruiters themselves were paid an extra bounty according to the height of the recruits they enlisted. If the recruit measured five feet six *líneas* (five feet ½ inch) in height when barefoot, the recruiter was assigned 15 *reales de vellón*; if the enlistee measured five feet and two "french inches," the recruiter received 30 *reales de vellón*; finally, if the recruit measured five feet three inches in height or more, the recruiter received 50 *reales de vellón*. These bounties were intended to stimulate recruiting efforts. Matías Galvez was promoted several months after the recruitment began, but before he departed he issued instructions in March 1778, stating that the minimum height for the enlisted men was to be reduced to five feet and recruits were to be gathered at Santa Cruz and quartered there until departure. Furthermore, the families of married men were to be allowed to remain at home until the time of debarkation (Pérez and Suárez 1992:135; Din 1988:16-17). Galvez named Andrés Amat de Tortosa, a captain of engineers in the regular army, in charge of recruitment for the Second Battalion of Louisiana. Amat assigned a number of commissioned recruiting officers on the islands. On Tenerife, recruiters were stationed at La Laguna, Güímar, Orotava, Garachio, and Adeje; there was a single officer each on Gran Canaria, Fuerteventura, Lanzarote, and El Hierro. No permanent officer was assigned on La Palma and La Gomera, but they were visited by a peripatetic recruiter (Pérez and Suárez 1992:121-122)

The Alcaldes on Tenerife were required to make a statement describing the civil estate or status of the enlistees from their jurisdictions, the composition of their families, the profession of the head of household, and whether the men were good material for populating the frontier area, including their "agility." In some cases, the condition and even the color of the enlistee's and his family's clothing were recorded (Pérez and Suárez 1992:124). These details were perhaps used to judge whether the emigrants were suitable for settlement, or hapless vagabonds. The information collected by the adjutant's officers has also allowed scholars to conduct a limited demographic analysis of the *Isleño* emigrants.

As will be discussed in greater detail below, the recruits were in large part day laborers or wage laborers, but it does not follow that they were all without real property. Some of the recruits from villages such as La Matanza, Las Ramblas, and Adeje had real property that they sold prior to their departure for Louisiana. In many cases, however, the economic situation of individuals recruited and their families was simply ruinous. A family in La Matanza had to sell their property to make decent their clothes before they could embark for Louisiana. In Las Ramblas, the holdings of recruit Marco Francisco were sold for 600 *pesos* of Castile, and those of Sebastian Esteban sold for a mere 80 *pesos*. In Adeje, Antonio Montesino was obligated to sell his appurtenances and then abandon his vineyards. In some locations, the recruits were unable to liquidate their property because of depressed economic conditions. For example, there were several cases in Los Silos and Realejo de Abajo in which the enlistees could not sell their property. The family of Isidro could not sell their house prior to their departure, and in several other cases houses were simply closed and deserted (Pérez and Suárez 1992:124-125).

Variations in economic conditions among localities on the islands makes generalizations difficult as to the context of enlistment for individuals from different places. For example, in the vicinity of Garachico on Tenerife, substantial previous emigration to Caracas, Campeche, and Havana had reduced the pool of available laborers for the vineyards of the area by 1777. Consequently, laborers were paid better salaries around Garachico than in some other areas. The exodus from Garachico to the Americas also affected the fishing industry, with the result of a shortage of fishermen in the locality and an inability on the part of those who remained to meet demand. In other areas, such as Los Realejos e Icod, some residents had converted to potato cultivation with great success, which relieved their strained circumstances. In Adeje,

many wage workers in the vineyards had already left, and the landlords were forced to pay better wages to get their crops harvested (Pérez and Suárez 1992:125-126).

By royal order of December 10, 1778, the enlistment of 700 men for the Battalion of Louisiana was to be completed by June 1779. Amat de Tortosa continued the recruitment until May 31, 1779, despite continuing resistance from authorities on the islands (Din 1988:17). Among those opposed to the recruitment was the Marqués de Tabalosos, who succeeded Matías Gálvez as *comandante* of the islands. Nevertheless, by May 31, 1779, 181 bachelors and 519 heads of families had enlisted (Pérez and Suárez 1992:158).

The largest number of persons destined for Louisiana departed from Tenerife. Those leaving from Tenerife eventually reached a total of 1,362 emigrants, representing 57 percent of the total number of persons who left the Canaries for Louisiana in the period 1778-1780. The majority of the emigrants in the Tenerife total actually originated on the island; a large proportion of the others were from La Gomera, who reembarked from Tenerife (Pérez and Suárez 1992:168). Most of the emigrants from Tenerife came from the northern side of the island and from Santa Cruz, the areas with the largest population and most closely integrated into commercial agriculture. The locality of origin of a portion of the recruits from Tenerife included:

Adeje	6
Garachico	3
Granadilla	2
La Guancha	27
Icod	86
La Laguna	19
La Matanza	14
San Juan de la Ramola	25
Realejo de Arriba	18
Realejo de Abajo	18
Santa Cruz	249
Santa Ursula	6
Sauzal	24
Los Silos	2
Tacaronte	1
El Tanque	1
Tejina	8
Valle Guerra	2
Valle Santiago	4

[Pérez and Suárez 1992:156-157]

The major loci of enlistment on Tenerife were Santa Cruz, Icod, and Orotava. Two hundred and forty-nine recruits, with their families totaling 823 persons, enlisted at Santa Cruz. Eighty-six or ninety recruits enlisted in the town of Icod, totaling 312 persons. Orotava, not on the above list, provided 68 recruits and 220 total persons (Pérez and Suárez 1992:133).

A significant number of recruits, both bachelors and married men, came from La Gomera and enlisted on Tenerife. Two hundred and seventeen men from La Gomera enlisted and, with their 85 families, may have totaled as many as 397 persons. Apparently, then, approximately 72 percent of all unmarried soldiers came from La Gomera. Alajeró contributed 177 persons in 35 families, and the locality of Vallehermoso supplied 17 families with 96 total people. The localities of Chipude, Agulo, and Hermigua supplied the remainder of the Gomero emigrants, and the capital of the island, San Sebastián, supplied none. On Gran

Canary, 286 men were recruited, totaling, with their families, 989 persons. Gran Canary contributed 41.6 percent of all emigrants in the Louisiana recruitment, the second greatest total of any of the islands. El Hierro and Fuerteventura, where official resistance to the recruitment was particularly strong, provided no enlistees. The recruitment totaled 2,373 persons (Pérez and Suárez 1992:131-134, 149-150). Table 4 provides a breakdown of the emigrants by age, sex, and marital status. Married men outnumbered bachelors by almost three to one, demonstrating the preference in recruiting for men with families.

Recruitment for the Louisiana battalion was conducted over 13 months, from April 1, 1778, to May 31, 1779. Recruitment did not occur at a consistent rate over that entire period of time. In fact, only at Santa Cruz did recruitment extend over all thirteen months. On both Tenerife and Gran Canaria, 50 percent of all enlistments occurred in the months of May, June, July, and August 1778. Enlistment at Santa Cruz was then almost at a standstill until March 1779. At Icod and Orotava on Tenerife, all recruiting occurred in the second half of 1778. At Icod, more than 80 percent of recruitment occurred in September, October, and November 1778. At Orotava, one-half of all recruits enlisted in December 1778. The largest months for recruitment on the entire archipelago were July 1778, in which 360 persons were recruited, 260 of them from Gran Canaria, and September 1778. After September, the grape harvest began, reducing the stimulus to enlist in the areas where grapes were grown. In some of these grape-growing areas, there was a late wave of enlistment when the grape harvest was completed. On Gran Canaria, however, there were no enlistments after December 1778. All recruiting on Lanzarote was conducted in January 1779 (Martinez 1982:144, 146-147).

Records of the age, sex, place of origin, family situation, civil status, profession, and family structure have been studied for a sample of the Louisiana recruits. Figures 10 and 11 indicate the sex and age distribution, respectively, of the recruits and their families. Since the men were recruited together with their families, a number of persons older than 36 years of age were included in the total number of emigrants. These were siblings, parents, and in-laws of recruits, those "relatively youthful, capable of working and of bearing arms in case of necessity" (Pérez and Suárez 1992:152). The median age of the emigrants was almost exactly 23 years. Figure 12 indicates the family affiliation of the emigrants. The majority of emigrants were children; but there were a number of brothers, sisters, brothers-in-law, sisters-in-law, and parents-in-law.

Six professional categories were represented in the sample: independent small farmers, carpenters, blacksmiths, cobblers, and day laborers. Figure 13 shows the relative percentages of these categories in the sample. The overwhelming majority of enlistees, 88.6 percent, were day laborers. Only 2 percent were farmers, 2 percent were carpenters, 1 percent were blacksmiths, and 4 percent were cobblers. The census indicates that the statistical mode of family size was five persons, consisting of a father, mother, and three children. There was slightly more female than male children, with males constituting 47.5 percent of the children in the sample and females comprising 52.5 percent. The discrepancy in the ratio of boys to girls was due to higher mortality rates among male children (Pérez and Suárez 1992: 159-160). More significant than locality of origin as a predictor of family size was the profession of the recruit, but this was only true in very general terms. Farmers tended to have smaller families than carpenters, blacksmiths, and cobblers, while day laborers had the greatest range in family size, from one to 9 members. Since day laborers made up the vast majority of the recruits, it is not surprising that this distribution closely resembles that of the sample as a whole. In general, the demographic characteristics of the Canary Island population seems to correspond to those of Mediterranean countries in this period (Pérez and Suárez 1992:161-163).

Table 4. Enumeration of Recruits and Their Families up to June 5, 1779 (Martinez 1982:152).

Date	Ship	Married Men 17-36 years	Bachelors 17-36 years	Women 10-36 years	Girls under 10 years	Young Men 10-16 years	Boys under 10 years	Total Recruits	Total Persons
7/10/1778	*Santísimo Sacramento*	53	72	72	29	13	25	125	264
10/22/1778	*Victoria*	63	25	97	28	25	54	88	292
10/29/1778	*San Ignacio de Loyola*	95	20	133	70	34	71	115	423
12/9/1778	*San Juan Nepomuceno*	48	5	66	33	11	39	53	202
2/17/1779	*Santa Faz*	90	12	131	70	22	81	102	406
6/5/1779	*Sagrado Corazón de Jesús*	95	22	142	62	31	71	117	423
	Totals	444	156	641	292	136	341	600	2010

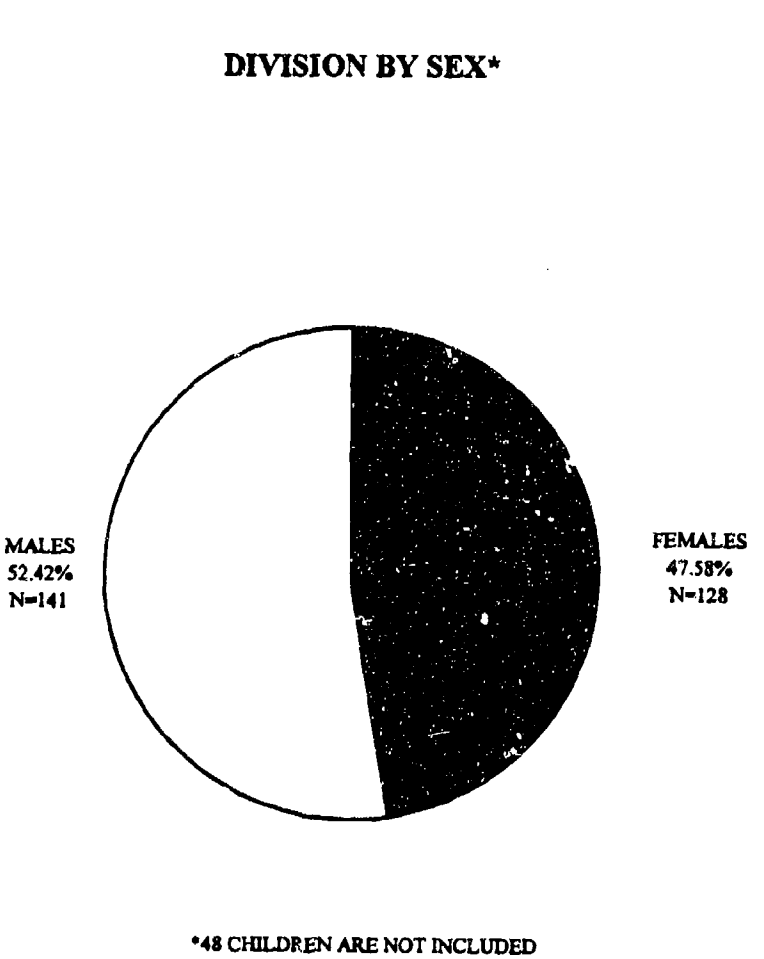


Figure 10. Division by sex of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:151).

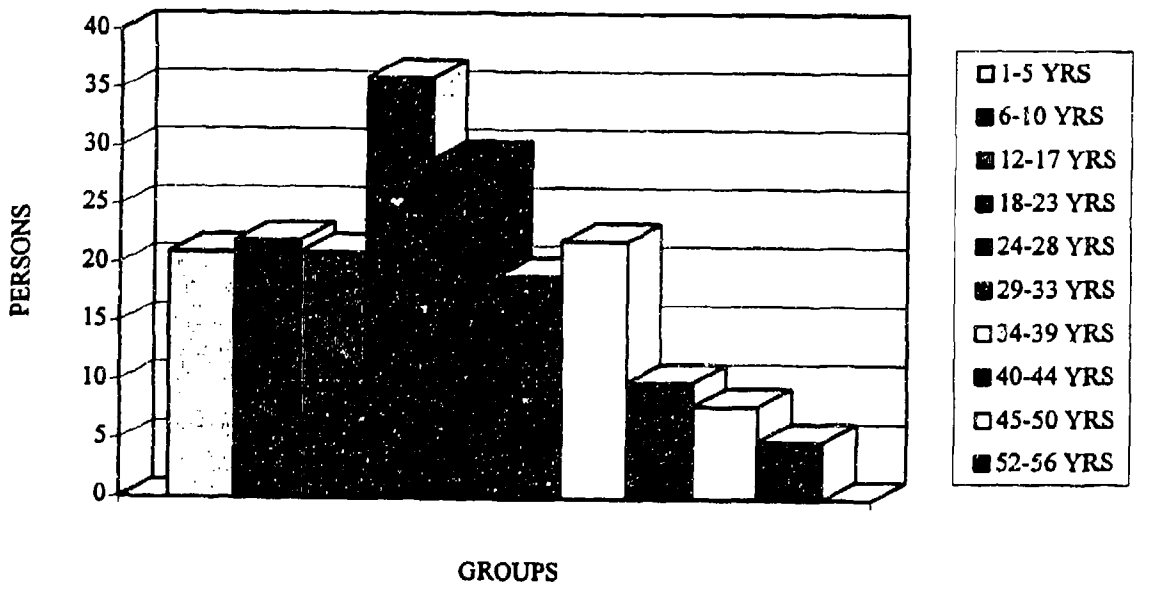


Figure 11. Age distribution of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:153).

FAMILY AFFILIATION

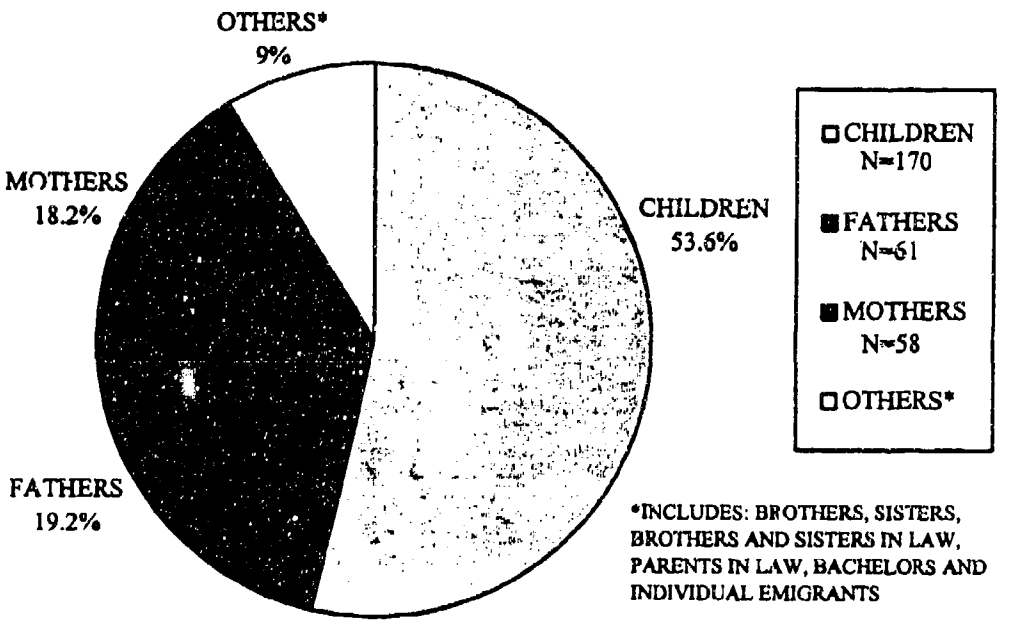


Figure 12. Family affiliation of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992: 154).

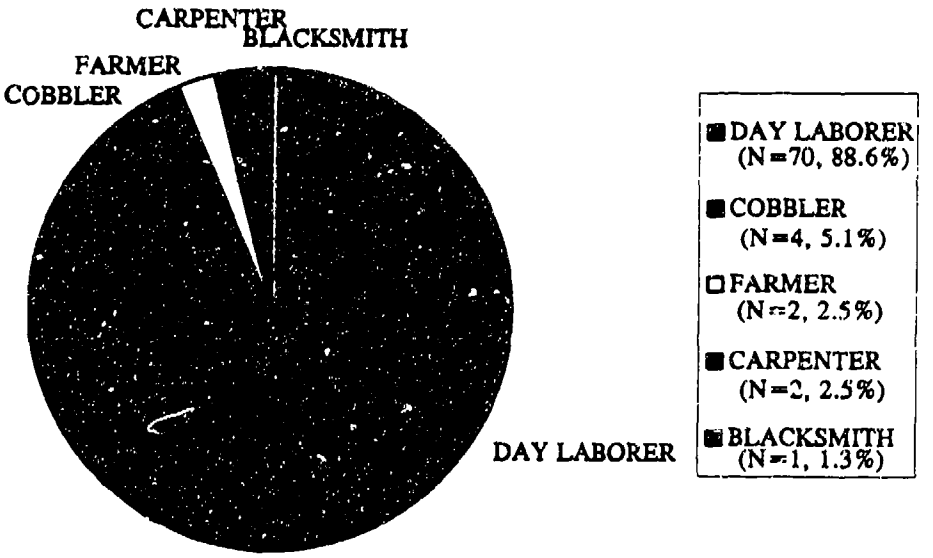


Figure 13. Professions of sample of Canario recruits for Louisiana (from Pérez and Suárez 1992:156).

The recruits with families on Tenerife resided in their homes until departure for Louisiana. The married recruits from the other islands also stayed in their homes until they were brought to Santa Cruz, where they were quartered in the barracks of Santa Cruz de Tenerife until they left. While they were in the barracks, there was evidently some training of the recruits. The severity of conditions and danger of epidemic disease on the Canaries is shown by the death of forty emigrants by February 1779. The constant illness among the enlisted men and their families required the Recruitment Commission to allocate additional money for their maintenance, including money necessary for doctors and medicines. Gálvez' order to keep the families of married men in their homes may have been prompted by the toll of disease at Santa Cruz, and the Commission recommended embarkation as soon as it was practicable (Pérez and Suárez 1992:129-130, 135). Roll of the recruits was called nightly, but this did not prevent numerous cases of desertion before preparations were completed for departure to Louisiana. Several recruits and families evidently enlisted with the full intention of deserting before embarkation; and in other cases, men were abandoned by their wives and children at the last moment before ships left for Louisiana (Din 1988:16).

Voyages to Louisiana, 1778-1779

Pa no mariarte, no embarcate.
If you don't want to get seasick, don't get on a boat.
-*Isleño* Proverb (Armistead 1992:132)

The Recruitment Commission was required to contract with commercial vessels for transportation of the emigrants. The ships were hired at a charge of either 30 or 28 *pesos* per passenger, with the exception that nursing infants went free of charge if they numbered fewer than ten per hundred passengers. If there were no nursing babies, six adult passengers per 100 were to travel at no charge to the Commission. The owner of the ship was responsible for providing the emigrants with adequate food, a chaplain, a surgeon, a chest of medicines, and aromatic herbs. The ship captains were directed to sail directly to New Orleans or Havana. Should the ship be required to stop, the Crown would assume responsibility for the passengers while on land, and the captains would bear the cost for ship repairs and the crew's wages (Din 1988:17-18). The feeding of the emigrants was the subject of detailed instructions from Amat. The emigrants were organized into messes of 10 people each, and were to have two hot meals per day, morning and afternoon. The morning meal was to consist of meat or fish, and in the afternoon, vegetable stew. Broth was to be reserved for those who were ill. The Commission even provided a supply of *pan bizcochado*, a sweet biscuit, to assuage the crying of the young children on the ships (Martinez 1982:149).

The daily shipboard life of the emigrants was further regulated by the instructions of Galvez. There were to be two guard shifts, consisting of ten men and changing at twelve hour intervals. Their task was to prevent "indecent matters and scandals" between the married couples. Vigilance was enjoined to prevent liberties with the women and families of the recruits, whether literally or not, "because of how our ship rats will be up to their mischief, with much deceit..." (quoted in Martinez 1982:153). Men's and women's sleeping quarters were separated. The women and children were allowed on the upper deck in the morning to air their bedding and clean their quarters. All of the emigrants were to keep a good manner among themselves, without becoming excited or permitting children to become so. The men were expected to maintain calm and optimism should any accident befall the ship (Martinez 1982:153).

The first ship that left the port of Santa Cruz was the packet boat *Santísimo Sacramento*, captained by Benito Ripoll. The ship departed on July 10, 1778, carrying 72 bachelors and 53 men and their families totaling 264 persons. This was the only ship carrying settlers

to Louisiana that had a majority of bachelor soldiers. Francisco Bonet and Manuel de las Caxigas were officers in charge of the emigrants. The Commission ordered,

> 100 *quintales* [a measurement of approximately 100 lbs.] of *pan viscocho*, 30 *fanegas* [sacks of 1½ bushels] of *gofio*, 100 sacks of potatoes, 10 *ducha* of seeds for vegetable stew. 20 *quintales* of salt fish, 6 dozen calabashes, 20 castrated billy goats, 6 hogs, 4 barrels of salt meat, 10 dozen gallons and 70 pipes of water... 25 mills of stone with which to grind *gofio*... [quoted in Pérez and Suárez 1992:136-137]

The daily rations were also regulated:

> Instructions for the ration to be distributed daily by Don Benito Ripoll...
>
> For a ration give 18 ounces of *vizcocho en galleta* [biscuit]; eight ounces of pickled beef; three ounces of ordinary vegetable stew; one pound and a half of split kindling; six ounces of oil for each lamp; vinegar sufficient to distribute among the messes and sick, one third of a gallon, with twelve ounces of *vizcocho de galleta*... [quoted in Pérez and Suárez 1992: 137].

The *Santisimo Sacramento* sailed via Cuba, and left Havana for New Orleans on September 1, 1778. During the voyage from the Canary Islands, three children had been born and one had died. Another child was born in Cuba, and four children died there. Three persons deserted, and fourteen men with their families, totaling 84 persons, were too sick to continue to Louisiana. Two hundred and sixty-four persons had embarked on this vessel in Santa Cruz, but there were only 179 emigrants aboard when it left Cuba. It took the vessel two months to sail to New Orleans, where it arrived on November 1, 1778, with 111 recruits, including six widows with children. Death and disease had prevented 64 percent of the emigrants who departed Tenerife on this ship from reaching Louisiana. However, it is possible that some of these emigrants left behind in Cuba later sailed to Louisiana (Din 1988:21-22).

Under Carlos III's trade liberalization of 1778, the Commissioners of the Recruitment would prefer that the ships carrying the emigrants travel directly to Louisiana, bypassing Cuba. This was intended to reduce costs and to prevent the epidemics and desertion that usually happened in Cuba (Pérez and Suárez 1992:137-138). Of the first five ships that carried the great majority of the recruitment's enlistees and their families to Louisiana, only one traveled via Cuba.

The second ship to sail out of Santa Cruz for Louisiana was *La Victoria*, captained by Andrés Orange, which departed on October 20, 1778. Aboard were 279 emigrants under the command of Antonio Palao. The *San Ignacio de Loyola* sailed on October 29 under Captain Felix de la Cruz, with 115 recruits and their families, totaling 426 persons. Martín Palao was in charge of the emigrants. The owner of the ship contracted the passage of the emigrants at 30 *pesos* per person, under the usual stipulations, for a total of 11,520 *pesos*. Half was paid at Santa Cruz and half at New Orleans, where the ship arrived on January 9, 1779. The last ship bound for Louisiana to depart Santa Cruz in 1778 was the packet boat *San Juan Nepomuceno*, under captain Domingo Morera, which sailed on December 9. Two hundred and two emigrants were on this vessel, 25 of which were babes in arms. On February 17, 1779, the *Santa Faz* under captain Josep Maró departed Santa Cruz with 406 emigrants under the command of officer Pedro Venero del Castillo (Pérez and Suárez 1992:138-139).

The existing *Libro Maestro* (Master Book) for the *Población de Barataria*, dated 1782, indicates that all of the families known to have been settled there arrived in Louisiana aboard the five ships mentioned above (Din 1988:209-235; Swanson 1988:103-113). These settlers

are listed in Table 5. The remaining vessels that carried emigrants to Louisiana encountered difficulties as a result of the outbreak of hostilities between Great Britain and Spain. The *Santa Faz*, with 102 recruits and a total of 406 emigrants, sailed in February 1779. Another vessel was ready to depart on April 15, 1779, the *Sagrado Corazón de Jesús*, but because of precautions against the British naval threat the ship did not leave Santa Cruz until June 5. This vessel carried 117 recruits, 95 of them married, for a total of 423 emigrants. Martinez (1982) presents an interesting list of foodstuffs acquired by the Commission for the *Sagrado Corazón de Jesús* (Table 6). This list of food supplies is considerably more extensive than that quoted in Pérez and Suárez (1992) for the ship *Santísimo Sacramento* (above). This inventory is representative of the lengths the Commission went to try to provide well for the emigrants, at least in terms of variety of foodstuffs. The Spanish Crown had an interest in maintaining the health of the recruits, having invested considerable expense in their enlistment and upkeep. The strength of traditional foodways was probably a significant consideration, and planners most likely tried to follow the folk food standards of the islands in procuring provisions for the emigrants, albeit that preservation of the foodstuffs during the voyage was important. In fact, while awaiting embarkation from Santa Cruz during 1779 and the first four months of 1780, emigrant families from La Gomera evidently suffered particularly from their lack of *pan de Gelecho*, the traditional mainstay of their diet (Din 1988:19). The characteristic sensitivity of traditional peoples to change of diet or deprivation of their dietary mainstays, despite provision of alternative foodstuffs, was a significant factor in the morale and health of the *Isleños* throughout their emigration and adaptation to life in Louisiana.

A total of 117 recruits, 95 of them married men, for an initial total of 423 persons, languished in Santa Cruz for over a year, awaiting convoy protection across the Atlantic. Attrition reduced the total number of remaining emigrants by 14 percent. Finally, the 368 remaining persons departed the Canaries for Louisiana aboard three brigantines, the *San Carlos*, the *San Pedro*, and the *Nuestra Señora de Los Dolores*. On May 8, 1780, these vessels finally departed Santa Cruz with a convoy from Cadiz. Evidently, only the latter of these vessels, carrying 17 recruits and 89 persons, succeeded in carrying its passengers directly to Louisiana. However, some of the recruits on the other vessels also eventually reached New Orleans. The *Sagrado Corazón de Jesús* carried 36 of the families recruited for Louisiana to Pensacola in 1782, and about 120 persons from the recruitment were taken to Caracas on the *San Pedro*. The frigate *Margarita*, packet boat *Santísima Trinidad*, and sloop *Delfín* carried a total of 71 families to Louisiana from Cuba in 1783 (Din 1988:23-24). Finally, three women who had deserted their enlisted husbands at Santa Cruz in 1779 were embarked for Louisiana in 1784, after hostilities with Britain had ceased (Martinez 1982:154-156). The cost to the Spanish Crown of recruiting and maintaining the Canario emigrants and transporting them to Louisiana may have been approximately 250,000 *pesos* (Din 1988:27). Additional costs would be incurred by the colonial government in Louisiana supporting the settlers.

Settlement in Barataria

Para el viento, no hay simiento.
For the wind, there are no foundations.
--*Isleño* Proverb (Armistead 1992:133)

An approximate total of the Canario recruits and families to have reached Louisiana by 1784 is almost 2,000 persons, including a few who traveled from Cuba to Louisiana as individuals and are not documented in official records (Din 1988:25). By January 15, 1779, 314 recruits, of whom 176 were married men, had arrived in New Orleans on the *Santísimo Sacramento*, *La Victoria*, and *San Ignacio de Loyola*. The vast majority of the *Isleños* to reach Louisiana had arrived by July 1779, at which time 153 bachelors, 329 married men, and 1,100 women and children had debarked in New Orleans from the three aforementioned ships and

Table 5. The Isleño Settlers of Barataria. This list has been compiled from the *Libro Maestro p. sentar el cargo del dano. de la nueba Pob. Barataria* (Archivo General de Indias, Papeles de Cuba, Legajo 2358), and passenger lists of Canary islanders sailing to Louisiana, 1778 (quoted in Din 1988:209-231; originally in the Archivo General de Indias, Audiencia de Santo Domingo, Legajo 2661). The ages listed are as of departure from the Canary Islands in 1778. Discrepancies between entries in the Libro Maestro and the passenger lists are indicated in parentheses. Persons noted with a cross (†) had probably died by 1782. Families whose head is noted with an asterisk (*) are listed in the *Libro Maestro* as having moved to Valenzuela in 1782. Swanson (1988, 1991) performed similar research and achieved similar results.

Libro Maestro Folio No.	Household	Ship
1	Melchor Jiménez (Ximénez) Catalina Perdomo, his wife Juan, 8 Diego, 6 Josefa, 7† Francisco, 13 months	*La Victoria*
2	José Herrera Lucía González, his wife Ignacio, 8	*La Victoria*
3	Juan Jiménez* Juana, 20 María, 14	*San Ignacio de Loyola*
4	José Hidalgo* Isabel Zambrana, his wife Gregorio, 10 Francisca, 9 Juan, 10 months	*San Ignacio de Loyola*
5	Lorenzo Hernández* María Jimenez, his wife Ana, 2 María, 5 months	*San Ignacio de Loyola*
6	Juan Cabrera† Lorenza Artiles, his wife Juan, 2 Francisco,1 María, 12 Sebastiana, 4	*Santísimo Sacramento*

Folio No.	Household	Ship
7	Antonio Suárez Juana Suárez, his wife Francisco, 10 months	*San Ignacio de Loyola*
8	Pablo Ruiz (Pablo Suárez Ruiz) María Olivares, his wife Juan, 4	*San Ignacio de Loyola*
9	Juan Alvarado* María Suárez, his wife Tomás, 4 Isabel,2 Francisca Antonia, sister-in-law †one died	*San Ignacio de Loyola*
10	José Antonio Ventura Antonio Pesas (Pérez), his wife José, 2 Lorenza, 7† María, 2	*San Ignacio de Loyola*
11	Lorenzo Rodríguez de León María Espino, his wife Luis, 12 Antonio, 8† Sebastiana, 6	*San Ignacio de Loyola*
12	Vincenta Delgado Felipa Jiménez, his wife Isabel, 3 Sebastiana, 3 months	*San Ignacio de Loyola*
13	José Dominguez María Francisca, his wife† Felipa Dominguez, his mother Fernando, 8† Tomasa, 7†	*San Ignacio de Loyola*

Folio No.	Household	Ship
14	Juan Alemán* Juana Ramírez, his wife Antonio, 14 Baltasar, 5 Pedro, 2 Josepha, 9 Sebastiana, 7	*San Ignacio de Loyola*
15	Francisco Ramírez* Ana Pérez, his wife Francisco, 4† Antonio, 5 months†	*San Ignacio de Loyola*
16	Domingo López Francisca (Catalina), sister, 26	*La Victoria*
17	Antonio Martel Francisca Antonia, his wife Antonio, 6 Domingo, 2 Blasina, 11	*La Victoria*
18	Juan Espino Joaquina Soler, his wife Miguel, 1	*San Ignacio de Loyola*
19	Pedro Guedes Isabel de Sosa, his wife Sebastiana, 22 José, 7	*La Victoria*
20	Manuel Ojeda Francisca Medina, his wife Juan, 8 months María, 3	*San Ignacio de Loyola*
21	Bartolomé Hernández Hidalgo Isabel Hidalgo, his wife	*La Victoria*

Folio No.	Household	Ship
22	Francisca de Orta (de Horta) Joefa López, his wife Pedro, 8 Antonio, 20 Josefa, 11 Isabel, 10	*San Ignacio de Loyola*
23	Gasper Sánchez Beatriz Flores, his wife Ana, 10 Cristóbal, 6 Francisco, 4 Josefa Pérez (Josefa Flores), sister-in-law, 16	*La Victoria*
24	José Hernandez Corvo Beatriz Francisca, his wife† Salvador, 8 Antonio, 4 Francisco, 14 months†	*San Ignacio de Loyola*
25	Gregorio Ojeda María Suáres, his wife María, 5 Josefa, 3 Rosalía, 1† Catalina Quintana (nursing infant) (José Suárez)	*San Ignacio de Loyola*
26	Cristóbal Quintero María Ruano, his wife Cristóbal, 18 María, 14 Beatriz, 10	*San Ignacio de Loyola*

Folio No.	Household	Ship
27	Gregorio Judas Ravelo Melchora de los Reyes, his wife José, 3 María, 8	*San Ignacio de Loyola*
28	Manuel Dominguez* Juana Francisca, his Antonio, 19 Agustin, 18 María Luisa, 12 José, 5	*San Ignacio de Loyola*
29	Antonio de Fuentes Marcela Pérez, his wife Juan, 11 Francisco, 8 Pedro, 6 José, 4 Ana, 2	*San Ignacio de Loyola*
30	Botolomé Monzón* María Peñales, his wife Francisco, 5 Isabel, 4 Juana, 2 Juan, 13 Josefa, 20	*San Juan Nepomuceno*
31	Felipe Francisco Bernarda Francisca, his wife Domingo, 18 Felipe, 12 José, 9† Lorenzo, 4 María, 23 Rosalía, 14 Andrea, 12	*San Ignacio de Loyola*

Folio No.	Household	Ship
32	Gaspar Ortiz López María Sánchez, his wife Juan, 3 María, 1	*San Ignacio de Loyola*
33	Agustín Romero Polonia Rodríguez, his wife José, 12 Domingo, 10 Juan, 7 Agustín, 4	*San Ignacio de Loyola*
34	Matías Francisco	*San Ignacio de Loyola*
35	Antonio Gonzáles Rosalía Ortega, his wife José, 8 Francisco, 4† María, 12 months† Josefa Ortega, sister-in-law (20)	*La Victoria*
36	Bernardo Nieves María Rodríguez, his wife Juan, 2 Brígida, 1 month Isabel, sister-in-law, 17	*San Juan Nepomuceno*
37	Domingo Vicenta Morales Gegoria Hidalgo, his wife	*San Ignacio de Loyola*
38	Francisco López Machado Margarita Ramírez, his wife María, 3 months (19)	*La Victoria*
39	Francisco Sánchez María Caballero, his wife Juan, 2 Francisco, 1	*San Ignacio de Loyola*

Folio No.	Household	Ship
40	Gabriel Hernández Bárbara Melián, his wife Vicente, 17 Félix, 15	*San Ignacio de Loyola*
41	Antonio Ramírez Ana Santana, his wife	*San Ignacio de Loyola*
42	Agustín Sánchez Francisca Ortiz,	*San Ignacio de Loyola*
43	Antonio Pérez Catalina Pérez, his wife Nicolás, 8 María, 5	*San Juan Nepomuceno*
44	Fernando Morales Bernarda Gonzáles, his wife Isidro, 1 month Fernando, 2	*San Juan Nepomuceno*
45	Antonio José de Armas María Delgado, his wife Domingo, 2 months†	*San Juan Nepomuceno*
45	Pedro Caniles Sebatiana Moreno, his wife Antonia, 10 Juan, 7 María, 4 Catalina, 8 months†	*San Juan Nepomuceno*
47	Bartolomé Caballero María Artiles, his wife Diego, 17 (7) Antonio, 6 Bartolomé, 12 María, 12 Agustina, 3 Andrea, 1 month	*San Juan Nepomuceno*

Folio No.	Household	Ship
48	José Suárez Francisca Rodríguez, his wife María, 5	*San Juan Nepomuceno*
49	Felipe Artiles Juana Jiménez, his wife Juan, 11 Antonio, 7 María, 2 Juan Cazorla, brother, 15	*San Ignacio de Loyola*
50	Juan Melián María Ortiz, his wife	*San Ignacio de Loyola*
51	Simón Casimiro Catalina González, his wife	*San Ignacio de Loyola*
52	Juan Alonso Romero María José (Jorge), his wife Juan, 13 Francisco, 4 Antonio, 2 Rosalía, 7 Andrea, 5 María, 7 months	*La Victoria*
53	Mateo Henríquez Josefa Vélez, his wife Felipe, 15 María, 2 months †one died	*La Santa Faz*
54	Miguel Suárez María de la Cruz, his wife† Domingo, 11† Sebastián, 7† Miguel, 1 month†	*San Juan Nepomuceno*

Folio No.	Household	Ship
55	Domingo Hiedra	*San Ignacio de Loyola*
56	Pedro José Caballero Ana (Maria) González, his wife Andrea, 7 Juana, 5 Asunción,4 (not in *Libro Maestro*) Miguel, 9 months Josefa, mother-in-law (Domingo, 4)	*La Victoria*
57	José Suárez	*San Juan Nepomuceno*

Table 6. Foodstuffs Acquired by the Commission for the *Sagrado Corazón de Jesús* (quoted in Martinez 1982:150-151).

150 *qq* [quintals, hundredweight] of common biscuit
20 *qq* of fine biscuit
26 *fanegas* [sacks] of 26 *qq* of gofio or millet flour
20 double barrels of beef of 55 *qq*
2 double barrels of pork of 5 *qq*
40 qq of salt fish
12 *fanegas* of fried meat [pork rinds]
4 *fanegas* of garbanzos
6 *fanegas* of kidney beans
6 *fanegas* of peas
18 *fanegas* of barley
2 barrels of 950 lbs. rice
75 *fanegas* of potatoes
20 *arrobas* [approx. 25 lbs. each] of oil
3 pipes of vinegar
2 pipes of wine
1/2 pipe of brandy
16 sheep
6 goats
10 pigs
200 chickens
2000 eggs
10 pounds of fine and ordinary spices
6 jars of pickles
35 strings of garlic
80 strings of onions
18 dozen of calabashes, salad greens, cabbages
50 Dutch cheeses
25 Canario cheeses
12 hams
1 case of candles
1 barrel of Canario olives
1 cask of honey
16 *qq* of dried fruit (almonds, raisins, figs)
50 lbs. of sugar
80 lbs. of chocolate
2 lbs. of coffee
2 lbs. of tea
25 pounds of biscuits and cakes
1 small case of plain medicines and unguents
200 stacks of firewood
3 dozen cases of quince preserves
80 casks of 14 barrels of water
6 [storage] tanks of water
12 *almodalas* [?]

from the *San Juan Nepomuceno* and the *Santa Faz* (Martinez 1982:157). Of the 57 families that were settled in Barataria and that were still present there in 1782, one came to Louisiana on the *Santísimo Sacramento*, one on the *Santa Faz*, ten on the *San Juan Nepomuceno*, 11 on *La Victoria*, and 34 on the *San Ignacio de Loyola* (Din 1988:209-235; Swanson 1988:103-113) Thus, the majority of *Isleños* settled in Barataria came to Louisiana on the *San Ignacio de Loyola* and an even greater majority sailed on the first three ships to arrive.

While it would be very convenient if the island of origin of the passenger groups on each ship to sail from Santa Cruz could be identified from the secondary material available, this is not, unfortunately, the case. The identification of locality of origin of the Barataria families might be possible from an examination of the enlistment records on Tenerife, if in fact they were mostly Tenerfeños (cf. Pérez and Suárez 1992), but this has not concerned previous researchers. Therefore, the limited demographic information discussed above can only be applied in a general way, and as a matter of probabilities, to the families established in Barataria (Table 5). The *Libro Maestro* for the Barataria settlement does not provide the age of the household heads or their spouses. It is likely that the average age of the male enlistees was somewhat higher for the Barataria settlers than for those established elsewhere because they were virtually all married men. It seems probable that the majority of the Barataria settlers were *jornaleros*, laborers who were willing to leave the Canary Islands for opportunities to own their own land in Louisiana. Vital statistics for the Barataria settlers can only be approximated, since births and deaths in the period 1778-1782 can be only partially reconstructed (below).

Bernardo Gálvez, the Spanish governor of Louisiana, was not fully prepared for the emigrant families that began to arrive in New Orleans in November 1778. On November 12 or 13, Gálvez sailed up the Mississippi River to personally inspect potential settlement sites for the *Isleño* recruits, returning to New Orleans by December 10. Gálvez decided on two likely locations, one at Bayou Lafourche and one on the Mississippi River at present-day Baton Rouge. These were to be the *Isleño* settlements at Valenzuela and Villa de Gálvez, respectively, and were selected largely on strategic considerations. Gálvez also chose to establish *Isleños* on Bayous Barataria and Terre aux Boeufs (or *Tierra de Bueyes*) for strategic reasons (Din 1988:28-29, 47, 51-52). The settlement in Barataria was to be located at the confluence of the main branch of the bayou and another waterway, originally also called Bayou Barataria and subsequently renamed Bayou Des Familles, in honor of the *Isleño* settlers.

Having arrived in Louisiana, the recruits waited in New Orleans for the accumulation of supplies and the distribution of land. The recruits, whether married or not, were given a daily subsidy of one *real* and one *medio de plata*, but this was not adequate to support a family. Gálvez realized the impracticality of maintaining the married recruits (*casados*) as regular soldiers, and discarded the organization of a regular regiment. The married *Isleños*, at least, were to be utilized strictly as settlers (Martinez 1982:157). Instead of the two battalions of infantry that were originally planned to augment the Spanish forces in Louisiana, Gálvez could only muster one new battalion, and that required the addition of 133 soldiers recruited in Mexico and 106 dragoons from Cuba (Din 1988:21).

Governor Gálvez had issued a statement of the terms of the settlement of *Isleños* on February 19, 1778:

> Decree as to immigration, which is to be observed by the commandants of the posts in this province to which families shall immigrate, to the end that they may be settled in accordance with the pious and humane intentions of His Majesty.

Upon the arrival of the persons whom I shall propose to settle, the commandant shall take pains to locate them in the most suitable place, as near as possible to each other, that distance may not make impossible the aid which they must render to one another. The commandant shall assign to each family a frontage of five arpents, with the customary depth [40 arpents].

For their living they shall be supplied during the first year at the charge of the royal treasury, to each family, which is to be understood to mean a husband and wife, a barrel of maize in the ear a head [apiece], for each one of the age of twelve, and for the children if they have any, from the age of six to that of twelve, a half barrel for each one, for those who exceed this age shall enjoy the aforesaid ration complete. In addition to the aforesaid aid, the royal treasury will buy for each of the families referred to an ax, a hoe, a scythe or sickle, a spade, two hens, a cock, and a pig of two months, with which they may easily found and establish a household which will provide them with a living, or may even make their fortune.

If there should be any among the children whose age and strength fit them for farm labor, there shall be added a hoe only for each one, since the other tools are to be provided only for a family, in which the children are included.

The kindness and gentleness with which the new colonists especially are to be treated will be shown in the same degree as the favorable intentions of the sovereign; and any commandant who shall deviate from this precept will expose himself to censure, while those who carry out these provisions with energy, and who give aid and succor to those who need them will manifest their zeal in His Majesty's Service, and will obtain His Majesty's gratitude.

The source and origin of all empires has been the refuge and kind usage which men find in the gentleness of the laws. The good or evil administration of them... is the greatest impediment to the building up of a government, for not only are those who are present and who are exposed to them exasperated, but others are prevented from coming. Hence as our laws are extremely mild they ought not be obscured by ambition and self-interest, as has been the case with some settlements formed for the king.

In all cases in which the commandant discovers the lack of effort of a settler, and in which his sloth or abandonment should prevent him from being entitled to these benefits, the commandant, after giving warning, should inform me, that I may take measures in the case.

Since I have received no warrant from His Majesty for the said supplies, and have taken [it] upon [myself] to provide them, the commandants shall notify the immigrants that I am in doubt whether the assistance is provided out of the expense of the royal treasury, or they will be obliged to reimburse the cost of it, when their means will permit. I have reported on this point to the king, asking for his royal decision.

The commandants shall be under obligations to send every six months an exact and detailed report of the increase or diminution of the families, with the circumstances of their progress, and the obstacles to it, in order that remedies may be promptly provided, if the case require them. In case of death or abandonment of a settler, the commandant shall take care to recover the tools which have been given.

For payment of the disbursements made for the supply of provisions and for the importation of the fowls and pigs, the commandant shall send, every three or six months, as may be convenient, a certificate of the amount, that a corresponding order for payment may be sent by me.

New Orleans, February 19, 1778

Bernardo de Gálvez

[quoted in Houck 1909:155-157]

Gálvez' intention was to establish the immigrants as quickly as possible, and lessen the strain on governmental resources by encouraging the self-sufficiency of the settlers. It is possible that immigrants that arrived aboard the *Santísimo Sacramento* and the *San Ignacio de Loyola* may have been established in Barataria in early 1779. The inventory of the succession of Andrès Jung, Commandant of the Barataria settlement, lists a receipt "on account, for rations for the families of Barataria" dated January 9, 1779 (Porteous 1941:1270). The *Santísimo Sacramento* arrived in New Orleans on November 1, 1778, and The *San Ignacio de Loyola*, which most likely carried the majority of the Barataria settlers to Louisiana, arrived in New Orleans on January 9, 1779. It may not have been coincidence that Jung purchased supplies on this date. *La Victoria* arrived in New Orleans on January 15, 1779, with additional families that were eventually settled in Barataria. It may have been necessary to purchase rations prior to the conveyance of families to Barataria, or the receipt in Jung's succession inventory may mean that families from these *Santísimo Sacramento* and *San Ignacio de Loyola* were already designated as Barataria settlers. Only one family known to have been in Barataria in 1782 arrived in Louisiana on the *Santísimo Sacramento*, namely the family of Juan Cabrera (Swanson 1988:104).

It is possible that *Isleños* from the *Santísimo Sacramento*, *San Ignacio de Loyola*, and *La Victoria* constituted the initial group of settlers in Barataria, and families that had arrived on the *San Juan Nepomuceno* and *La Santa Faz* by July 1779 received lands after the earlier arrivals. The order of entries in the *Libro Maestro* might indicate location of tracts assigned to the *Isleño* families (Swanson 1988:102), but this is speculation. It seems most likely that if there is any geographic rationale for ordering of folios in the *Libro Maestro* (each folio containing one family entry), the tracts settled first would be listed first, with later substitutions made when settlers and their families moved between tracts. In fact, in the first 29 folios of the *Libro Maestro*, every family listed arrived on the *San Ignacio de Loyola* or *La Victoria* in January 1779. Nine families that debarked from the *San Juan Nepomuceno* and one family that arrived on the *Santa Faz*, both of which ships arrived in New Orleans six months after the *San Ignacio de Loyola* and *La Victoria*, are listed in the last 21 folio entries of the *Libro Maestro*. Perhaps the earlier entries are also at one end of the settlement area along Bayou Des Familles, possibly beginning at the confluence with Bayou Barataria.

Settlement of Canary Islanders at other sites selected by Gálvez began in January 1779. The first *Isleño* families were established at Villa de Gálvez on January 19, 1779, and eventually 400 Canarios were established there. The other settlements, at Valenzuela on Bayou Lafourche and San Bernardo at Terre aux Boeufs, were established at approximately the same time. While it is likely that most of the settlements received additional families after 1779, there is no documentation that any were sent to Barataria. This circumstance is probably a result of the situation in Barataria, which from the beginning was a disaster for the *Isleños* established there. Barataria would prove the shortest-lived of the *Isleño* settlements (Din 1988:29, 31, 47).

The reasons for the failure of the *Población de Barataria* are not mysterious. The location of the settlement was chosen on the basis of strategic concerns, not suitability for agriculture or habitability. Of the four Louisiana *Isleño* settlement locales, Barataria was the least appropriate for the establishment of a self-supporting yeomanry. Although in some measure bad luck was responsible for the miserable experience of most of the *Isleños* in Barataria, the entire premise of the settlement was flawed. On the surface, it appears that the settlers were well supplied, but in fact expecting the small families to become self-sufficient quickly in the Barataria setting was actually expecting the nearly impossible. In this sense, the Spanish planners could have avoided a great deal of fiscal expense and human suffering by putting the *Isleños* somewhere else. Nor can blame be ascribed to the colonial government without qualification; Governor Gálvez seems to have attempted to provide the settlers with a reasonable quantity of equipment and supplies, and Andrés Jung, commandant of Barataria, may have continued to subsidize the *Isleños* after it was apparent that this settlement was a failure (Swanson 1991:61).

The Barataria settlers were to be provided with houses. The construction of the houses was contracted by the Spanish government to Joseph Chalon of New Orleans, a prominent lawyer and landholder. Actual building of the structures may have been performed by slaves. The houses provided to the settlers in Barataria may have been similar to those supplied to the *Isleños* at the other Canario settlements, measuring 28 to 32 feet in length and 15 or 16 feet in width, with galleries running the length of one or two sides. In some cases, they may have been built on the top of *Rangia* shell middens at prehistoric Native American sites, or earth mounds may have been raised for the houses. The houses may have been of post on sill (*poteaux sur sole*) construction, with mud and moss *bousillage* fill between the structural timbers (Swanson 1988:121-122). However, it may be misleading to assume that all of the houses built for the *Isleños* in Barataria were well-constructed and on raised mounds. Site 16JE223 provided no evidence of a raised house site. It would also not be very surprising for these contract houses to have been hastily and shoddily built. There is not, in fact, any known documentation of how the houses were actually constructed. In the succession inventory of Andrés Jung, there was noted a receipt by Joseph Chalon, in favor of Juan Ventura Morales, "for 500 *pesos*, on account, for the houses he built in Barataria" (Porteous 1941:1268). This sum almost certainly represents the construction of only a few houses. Nevertheless, the houses may have been at the lower end of the impermanent architecture spectrum, perhaps built of *poteaux en terre* (post in earth), a common form of construction for small homes and outbuildings in the colonial period. Daub or *bousillage* fragments recovered at *Isleño* house sites, including 16JE223, could have been associated with *poteaux en terre* construction, in which the spaces between the upright posts are chinked, as well as more sophisticated impermanent building methods such as *poteaux sur sole*. Seventy-eight houses similar to those of Barataria were built for *Isleños* in San Bernardo in 1784, at contracted prices of 100 and 110 pesos each (Din 1988:54). In comparative terms, this was the value of a comparably-sized shed or shop building of *poteaux en terre* or several head of horses or cattle (cf. Cizek 1982:195). This relatively low contract price makes it doubtful that the San Bernardo houses were built to a very high standard, and the Barataria houses were likewise almost certainly very modest affairs. Significant dependencies such as kitchens or barns may have been built by the *Isleños* in Barataria (Swanson 1991:80) but there is no documentary evidence that this was the case. A 1784 judicial record suggests that settler Antonio Suarez had a "storehouse" (Porteous 1937:861) robbed by runaway slaves; however, Suarez' original testimony only states that he was robbed, without specifying a building (Porteous 1937:860). The domestic nature of some of the articles taken suggests it was his house that was plundered (see below). It may be that many of the *Isleño* families, without large numbers of livestock and living virtually hand to mouth, did not build any significant dependencies prior to their departure from the area.

Although Gálvez had originally planned to apportion five arpents frontage of land to each family, the practice seems to have been that varying quantities were actually distributed. In San Bernardo, tract size was related to family size, but three arpents frontage was usual (Din 1988:52; Swanson 1991:73). Previous investigations in Barataria (Yakubik 1989) indicate that house sites may have been located approximately 580 feet (or three arpents) apart, suggesting a three arpent frontage for each house tract. However, an 1830 cadastral survey map by William H. Cobb and John Maxwell of a portion of Bayou Des Familles lying north of 16JE223 shows the bayou flanked by 5- to 6-arpent front tracts (Swanson 1988:120). If these tracts are the original Canary Islander settlement land apportionments, they do not reconcile with the previously investigated house sites. The *Plano De las Concessiones Desde la Ciudad de Nueva Orleans, Hasta Bayu Sn. Juan, la metairy, chapitoulas y Barataria* in the Papeles de Cuba, Archivo General de Indias, Seville, ca. 1779, indicates the tract intended for the establishment of the *Isleños* in Barataria (Figure 14). The tract encompassed about seven miles of frontage on Bayou Des Familles. This expanse would have been sufficient to allot three arpents each for the 73 families known to have lived in Barataria between 1779 and 1782. Since archeological evidence has strongly suggested a pattern of *Isleño* habitation sites every three arpents of frontage, with improvements located on the eastern side of Bayou Des Familles, it is probable that virtually all of the seven mile tract set aside for the *Isleños* was settled in the initial establishment in 1779. Families probably moved to new tracts when they became available (see Yakubik 1989:117-131), as others left Barataria altogether.

Thus, assuming it was actually built, the settlers were provided with housing of some sort, and they were given a ration of maize for sustenance until they could harvest crops of their own. Previous scholarly discussions have frequently mentioned the unfortunate weather suffered by the new colonists, but have not considered many of the difficulties faced by the *Isleños* aside from the weather. It is not necessary to overstate these problems, relative to those confronted by any pioneering group, to better appreciate the struggles of the *Isleños* in their new home.

It cannot be stated definitively whether or not Gálvez' order of one barrel of maize "in the ear" per adult would be adequate to maintain life for several months, but it certainly would not be sufficient in and of itself to maintain health. It is also unclear whether this corn was also meant to be the supply for planting. Nor is it at all certain that the *Isleños* were familiar with maize as food or with maize cultivation, since maize was only beginning to be grown in the Canary Islands in the mid-1770s (Pérez and Suárez 1992:46). Maize was not provided for rations to the emigrants aboard the ships, and this is probably indicative that most Canarios were not familiar with it. The *Isleños* would have had to adapt rapidly to their New World dietary mainstay. Among the bills and receipts concerning the Barataria settlement in Jung's estate was one for 47½ barrels of rice and several for maize and other provisions (Porteous 1941:1269-1270). The maize known to have been provided in Barataria exceeds in quantity the rice supplied. In San Bernardo, some of the settlers may have received rice as rations (Swanson 1991:73), and in Valenzuela, some wheat, barley, and oranges were distributed (Pérez and Suárez 1992:144).

Even assuming that the *Isleños* quickly came to favor corn as a foodstuff, preparing their *gofio* with hominy instead of millet as they had on the islands, there remained the task of subsistence farming. In Barataria, largely a virgin wilderness of hardwood forests and back swamp, this was certainly a daunting prospect. The *Isleños* had to contend with an environment and climate dramatically different from that of their homeland. In modern times, the Canary Islands have become a popular tourist destination because of their warm, arid, climate and clear skies. However, rainfall in southern Louisiana can exceed in one day the total annual precipitation level for portions of the Canary Islands. Those settlers who arrived in the colony in the spring of 1779, without an interlude in Cuba, would have had to undergo "seasoning," acclimatization to their New World surroundings, in warm, humid weather. This

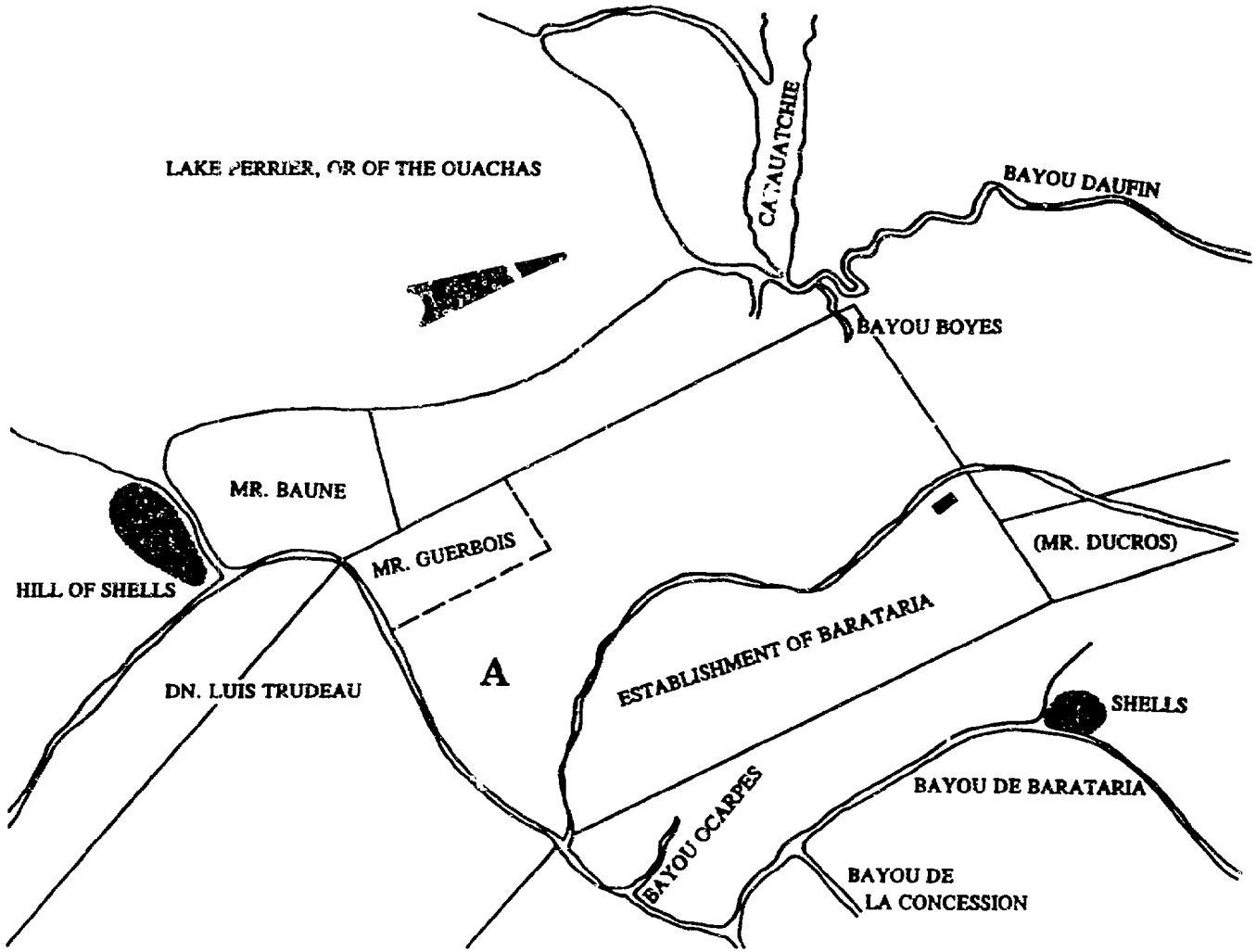


Figure 14. Excerpt from *Plano De las Concessiones Desde la Ciudad de Nueva Orleans, Hasta Bayu Sn. Jaun, la Metairy, Chapituolas and Barataria*, redrawn. No date; circa 1779. Archivo General de Indias, Papeles de Cuba, Legajo 2359. No scale available.

was when new European arrivals suffered most from exposure to diseases to which they had not developed any immunity or resistance. The Canary Islanders may have been fortunate if in fact they had acquired some immunity to malaria before coming to America, and the dispersed nature of the Barataria settlement probably limited the virulence of yellow fever, the dread *vómito negro* (McNeil 1986:27-29) that periodically decimated the urban center of New Orleans and other colonial towns. Terrible suffering is documented at other of the *Isleño* settlements from smallpox, scurvy, dropsy, and *sarna* or scabies (Pérez and Suárez 1992:142-143). Scabies was probably brought from the Canary Islands (Bory de St. Vincent 1805:15, 30), but the other afflictions of the *Isleños* were undoubtedly intensified by the strenuous frontier conditions in which they lived.

The one ax provided by the Spanish crown to each family of colonists would have seen daily use. The initial task of the settlers was to clear sufficient land to raise crops for subsistence. Given the labor resources of the *Isleño* settlers, this was a serious undertaking. The natural levees of Bayou Des Familles were covered with virgin stands of hardwoods, predominantly live oaks and red maples. Mature live oaks reach four feet in diameter, and mature red oaks a diameter of two and one-half feet and a height of 60 to 90 feet (Little 1980:410, 577). These large trees would have to be girdled, allowing a first season of maize and legume cultivation among the massive root systems. Actual removal of the trunks and roots of the live oaks must have been a back-breaking and potentially demoralizing endeavor. The arduous job would have been performed by the adult *Isleños* and probably the older children or adolescents, but younger children could hardly have been much help in the difficult and dangerous felling of timber and clearing of stumps and roots.

At least 73 families were established in Barataria, including 16 families that left the settlement in 1779 and 57 that were still there in 1782. The 57 *Isleño* families listed in the *Libro Maestro* for Barataria had among them over 100 children under the age of 12 years. For example, Antonio de Fuentes and his wife Marcela Pérez had five children in his family under 12; José Antonio Ventura and his wife Antonia Pesos had one child seven years of age and two two-year-olds (Din 1988:209-235; Swanson 1988:103-113). Several families contained adolescent or adult parental siblings or in-laws, who eased some of the heavy burden of clearing, planting, and tilling, or who cared for the young children. In general, these were young families, and the re-naming of the bayou carries a particular poignancy when it is considered that child mortality was probably high (Pérez and Suárez 1992:143). The *Libro Maestro* suggests that at least 19 children and three adults died in Barataria between 1779-1782 (Swanson 1988:103-113), and the actual total number of deaths may have been significantly greater. It is surprising that evidence of high mortality in Barataria is not more obvious.

The settlers at Barataria were completely dependent on the manual labor of their family members. There is no available evidence that the Barataria settlers acquired draft animals at the time of their establishment on the bayou, and draft animals or equipment for them are not mentioned in any subsequent reports concerning the settlement. However, some *Isleños* arriving in San Bernardo in 1783-1784 received two horses and a cart (Din 1988:53), and the settlers who remained in Barataria may have obtained oxen, mules, or horses at some point. But initially clearing their fields without horses or oxen was a difficult necessity for the Barataria *Isleños*, and without slaves to augment the labor of the family members, preparing the ground and undertaking regular cultivation must have been a formidable task with such limited resources.

It is difficult to imagine that the *Isleños* had the wherewithal to undertake extensive drainage and/or irrigation projects, as has been contended by Swanson (1988, 1991). This seems most unlikely in the period from 1779 to 1782, when subsistence would have been the critical concern. It is perhaps even more unlikely after 1782, since by 1784, the *Isleño* population of Barataria had declined to about 100 persons, a reduction of approximately 70 percent

from its 1779 total. By the 1788 census, only 40 persons were listed as residing in Barataria, at least an 85 percent decrease since 1779. These represented only a few families, mostly residing near the Mississippi River (Din 1988:51), and children would have constituted a substantial portion of the total. There were only four slaves in Barataria by this time. This is a small labor pool indeed.

Given the difficulty of removal of the virgin forest, initial cultivation efforts would have been concentrated on the natural levee where drainage was most appropriate for subsistence crop production. Clearing large expanses of virgin forest and digging elaborate ditches and levees in geometric patterns, regardless of the natural topography and extending far into the back swamp, seems inconsistent with what is known about conditions in Barataria. The back swamps themselves, largely in *cyprière*, were substantive obstacles to development. Mature bald cypresses can attain diameters of 5 or even 10 feet (Little 1980:302), and pre-industrial float logging methods required significant labor resources. Even with sufficient labor, something in meager supply in Barataria in the era of *Isleño* habitation, traditional float logging could not make a dramatic or extensive impact on stands of virgin cypress timber (Mancil 1972:69-70). Tupelo gum, the other principal tree of the back swamps, can reach 3 feet in diameter and heights of 100 feet (Little 1980:620).

The development of advanced irrigation systems present in the Canary Islands by the late-eighteenth century required generations of remunerative commercial monoculture and a growing population base; the adaptation of Canario irrigation methods to similarly arid conditions in southern Texas, in San Antonio, also occurred in a settlement that was successful (Glick 1972). But Barataria was a failure by any criterion. The early *Isleño* settlers of Barataria were unable to feed themselves and had to be provided rations periodically. They received supplies on at least three occasions in 1779 alone. Jung's succession inventory contains several undated bills and receipts for foodstuffs and numerous appropriations for the *Población* (Porteous 1941:1269-1270). The settlement was tenuous from its beginning. In a 1794 land grant petition, Barataria resident Louis Pelteau described "the place which had been inhabited by the Spanish families... has been recognized as having only two arpents that are cultivable; the rest continuing to be inundated during part of the year and not cultivable nor usable by animals" (quoted in Swanson 1991:96). It is difficult to see how the agricultural improvements envisioned by Swanson (1988, 1991) and that were appropriate to large-scale commercial agriculture, could have been accomplished by so few adults, from as many 160 to perhaps fewer than 120 men and women, in a matter of three years; nor does it seem likely that such efforts would have been undertaken on land that demonstrated its unsuitability for cultivation.

Swanson (1991) states that "the *Isleños* who remained in Barataria began cultivating sugar cane as their staple crop" which required an extensive system of drainage and irrigation ditches (Swanson 1991:74). There is no documentation that this was the case during the colonial period. In fact, during the period from 1765 to 1790, there is no indication of significant production of sugar cane anywhere in Louisiana. The cane that was produced was grown in small stands, mere "eating cane" (Le Gardeur 1980:17). It would not be surprising if the *Isleños* in Barataria grew small quantities of cane for their own or local use, but commercial production is another matter. Experiments with large-scale sugar cane growing and sugar production occurring in the 1790s in Louisiana were conducted by larger, well-capitalized planters on alluvial tracts with slave workforces (Le Gardeur 1980:11-21). The central problem for cane production in Louisiana, historically, was availability of labor (Begnaud 1980:29). A sizable workforce was a necessity if commercial quantities of cane were to be cultivated and harvested. While the relatively thriving *Isleños* community at Terre aux Boeufs may have sold cane for a time to other planters for processing in the early-nineteenth century, by this date the population of Barataria had declined dramatically. By 1802, as discussed in greater detail below, there were only two families of *Isleño* extraction in Barataria. It is un-

likely that any substantial portion of the Bayou Des Familles area had been prepared for sugar cane cultivation prior to the growth of the Louisiana sugar industry in the nineteenth century. This is not to say that the *Isleños* were idle, or had only a negligible impact on their landscape. Farms that survived after the exodus of *Isleño* settlers from Barataria in 1782-1783 may have been characterized by significant alteration of the landscape beyond the clearing of timber and rudimentary drainage efforts. However, our interpretation of the *Isleño* settlement in Barataria must conclude with a profound skepticism of large-scale irrigation or drainage features purportedly observable today.

The *Isleños* in Barataria had to contend with more than the difficulty of clearing agricultural land of its virgin natural levee cover. On August 18, 1779, a hurricane struck southern Louisiana, causing widespread damage. The houses of the Barataria residents were damaged or demolished and their crops were destroyed. Governor Gálvez was in the midst of planning military action against the British in West Florida, and in a dispatch to his superior, dated the day after the storm, he described the plight of the colonists:

> We have been hit by a terrific hurricane, the like of which there is no recollection in the annals of the colony. Although the wind and the rain began on the night of the 17th, it was not until three o'clock in the morning that it attained its full violence, keeping its strength continually until ten o'clock in the morning, then it began to lose its force a little, but not until all the houses, barges, boats and pirogues were demolished, some with many people from these settlements... Others have gone aground, half destroyed and useless, stranded in the woods and finally, there are others of whose fate we are still ignorant...
>
> The village [unspecified] presents the most pitiful sight. There are but few houses which have not been destroyed, and there are so many wrecked to pieces; the fields have been leveled; the houses of the near villages, which are the only ones from which I have heard to this time, are all on the ground, in one word, crops, stock, provisions, all are lost.
>
> Your Lordship might imagine w is my situation, finding myself all at once without any of the help upon .i I counted to put my plans into execution, because even if I would dare to go on with them, I could not even take the first step, due to the absolute lack of boats and pirogues, all lost in the storm and because the army men, on whom I counted, have, together with their families taken shelter among the wreckage of their homes, even under the wagons, and I believe that they would rather be killed than to be separated from their unfortunate parents, wives, children and brothers, in this hour of despair and grief, leaving them without shelter completely exposed to the inclemency of the weather...[Works Progress Administration of Louisiana n.d.:59-64]

Gálvez soon ordered the commandants of the settlements to require the planting of potatoes and peas to forestall a looming subsistence crisis (Works Progress Administration of Louisiana n.d.:64). Joseph Chalon was paid 227 *pesos* to repair damaged houses in Barataria (Porteous 1941:1270), possibly after this hurricane. The settlers were also given new provisions of food and other necessities. It seems unlikely that the Barataria settlers were mobilized as militia for participation in military action against the British in August and September 1779, although *Isleños* from Villa Gálvez certainly were, and some from Valenzuela may have been (Din 1988:34, 68).

If the hurricane of August 18, 1779, was not enough, in the late fall of 1779 or early winter of 1780, a crevasse developed in the Mississippi River levee. The settlement was inundated, causing "a total loss of planted fields and livestock" (Din 1988:48). By December

1779, Gálvez sent Lieutenant Antonio de St. Maxent, the commandant of Valenzuela, to Barataria to transfer some of the *Isleño* families to his jurisdiction. While in Barataria, de St. Maxent noted the proclivity of the area to flooding. Evidently many of the families at the settlement wished to leave, but St. Maxent only took 16 families from the settlement to Valenzuela (Din 1988:48). None of these families have been identified, but they probably constituted almost one-quarter of the total number of *Isleños* established earlier that year.

Another hurricane struck southern Louisiana in 1780, and the Barataria basin experienced another severe inundation in 1782. The Spanish authorities dutifully re-supplied the Barataria settlers or disbursed cash to them after each catastrophe. Records indicate that cash disbursements were made by the government to maintain the Barataria settlement in every year from 1779 to 1783, inclusive. The *Libro Maestro* contains accounts for each of the families, stating the quantities of supplies or sums of money distributed. An initial distribution of supplies in line with Gálvez' directions of February 1778 was made at the establishment of the settlement. In July 1779, the authorities provided each family with supplies of linen, cotton cloth, calico, and other types of cloth; spools of thread, twine, shawls, blankets, shoes, hats, handkerchiefs, kettles, and cash (Swanson 1988:114-115). Building hardware and nails were also provided in Valenzuela (Pérez and Suárez 1992:144) and most probably in Barataria also. In January 1782, another distribution of vital tools and supplies was made to the Barataria settlers, including axes and hatchets, hoes, sickles, breeches, guns, mosquito nets, drawknives, iron shovels, shirts, woolen cloaks, petticoats, shawls, barrels of rice and corn, and cash (Swanson 1988:114-115).

However, the floods of 1782 may have been the last straw for most of the Barataria *Isleños*. In August of that year, Intendant Martín Navarro reported to Juan Ventura Morales of the accounting office in New Orleans that the families in Barataria had been receiving rations since January and had suffered from floods. The following month, September 1782, a group of the Baratarians petitioned Pierre de Marigny, commandant of San Bernardo, to allow them to move to his district, and they also asked for rations and other benefits. De Marigny notified Morales of the request, and on September 22, the heads of 25 families in Barataria petitioned Morales to allow them to move. Barataria, they said in their petition, could not be effectively cultivated. Permission was granted, and in late September, a total of at least 111 persons in 25 families moved to Terre aux Boeufs, having been granted rations for a year, houses, tools, and clothing. Only after their move to San Bernardo did these Baratarians have access to a doctor (Din 1988:48, 50), although eighteenth-century medical care may actually have been of dubious benefit to their tenuous health.

The families that left for San Bernardo in 1782 probably constituted over 40 percent of the Barataria settlement. The departure of these settlers may have caused the Spanish authorities to decide that Barataria was a hopeless failure. To encourage the remaining *Isleños* in Barataria to move, Morales suspended aid to the settlement as of October 31, 1782 (Din 1988:50).

The decision by the colonial government to end aid to the Baratarians probably contributed to the decision of another group of 38 Canary Islanders in Barataria to move to Valenzuela. The exodus from Barataria continued into 1783, leaving only about 100 total *Isleños* at the settlement by 1784, probably less than 40 percent of the number of *Isleños* established in Barataria in 1779. Freak weather contributed to the hardships of the *Isleños* in the late summer of 1783, when a frost struck southern Louisiana. Had Commandant Jung been supplying any provisions after 1782 at his own expense, this came to an end with his death in 1784 (Porteous 1941:1270). Additional *Isleño* settlers abandoned Barataria in 1784 and 1785, mostly for San Bernardo but also for New Orleans, where a number of *Isleño* families had settled between 1779 and 1784. In 1788, the whole Barataria region contained only about 40 inhabitants, most of them residing not on Bayou Des Familles but near the Mississippi River

(Din 1988:51). It may be fair to affirm the demise of the *Población de Barataria* by 1785, after which time it is difficult to consider the handful of remaining families as a community or settlement rather than merely isolated homesteaders.

However, the *Isleños* were not the only residents of the Barataria basin. At the time of the arrival of the Canary Islanders in Barataria in spring or summer 1779, a village of Ouacha Indians may have been located near the confluence of Bayou Barataria and Bayou Des Familles. Located on the western bank of the bayou, the village was observed by Jean Baptiste Grevemberg in July 1779, approximately one-half mile above the tract of Monsieur Dauterive (Archivo General de Indias, Papeles de Cuba, Legajo 2358). Previous investigations at *Isleño* house sites have yielded Native American ceramics in association with European material (Yakubik 1989; Franks and Yakubik 1990; Fuller 1991). It is very likely that pottery vessels were supplied by the Ouacha in trade with the *Isleños*, who may have been supplementing their meager supplies from the Spanish administrators.

In addition, by the 1780s, bands of *cimarrónes* (maroons), escaped slaves. had established themselves in several isolated areas of Louisiana, including Barataria. Relying on dense forest, *cyprière*, and trackless marsh to avoid apprehension, the *cimarrónes* in some cases built permanent settlements and engaged in agriculture as well as hunting and fishing for their sustenance. In some documented instances, maroons participated in illicit lumbering in the *cyprières* supplying white sawmill owners with logs that had been cut and squared (Hall 1992:207; Porteous 1937:840-865). The geographic centers of the maroon bands and their activities were the Bas de Fleuve, an area of the Mississippi River below New Orleans, and Lake Borgne. The maroons of lower Louisiana had a charismatic leader named St. Malò, a runaway from the D'Arensbourg estate on the German Coast. He accumulated a large following, and established a number of settlements, including Ville Gaillarde on Lake Borgne and another at Chef Menteur. By 1782, slaveowners in the region felt that the presence of the St. Malò band was intolerable. Two unsuccessful expeditions were undertaken, and in another expedition in March 1783, Don Guido Dufossat broke up the settlement at Ville Gaillarde, killing three maroons and capturing 32. St. Malò and 10 others escaped (Hall 1992:216-216).

Among the followers of St. Malò was a maroon named Antonio, who evidently participated in several robberies perpetrated by the St. Malò band both in New Orleans and the countryside. In the spring or summer of 1784, Antonio went to Barataria, perhaps having escaped the successful attack on Ville Gaillarde. In Barataria, Antonio took up with a maroon named Colin. Colin had run away from the plantation of M. Gentilly four times, the last in May 1784. About the middle of May, Antonio, Colin, and an unknown third maroon robbed *Isleño* settler Antonio Suárez and his family of three shirts, two coarse and one fine; two pairs of trousers, one short and one long; a jacket with two *reales* in coin and one half-*reale* in currency in the pocket; a chemise; petticoats; a bed sheet; a woolen blanket; sacks; a bucket; a sifter; a half barrel of rice; a third of a barrel of salt; two pounds of salt meat; "a little fresh cheese," and five barrels of corn. On July 30, Suárez made a declaration before the *Alcalde* in New Orleans, Francisco Maria de Reggio, and denounced Antonio and Colin, identifying them by name (Porteous 1937:860-861). How Suárez knew the names of the maroons is not recorded; it is possible they were well-known in the Barataria locality.

These two maroons may have returned to Ville Gaillarde after their Barataria crime, but it is likely that Antonio and Colin had been apprehended by the date Suárez made his denunciation. In another attack on Villa Gaillarde, St. Malò was captured along with 16 others by Lieutenant Francisco Bouligny. Antonio and Colin may have been caught during this or during other raids and arrests in the countryside. Eventually, 60 maroons of both sexes were imprisoned in New Orleans (Hall 1992:228-234). On August 7, 1784, Antonio, Colin, and many others were condemned:

> ...In accordance with Law 21, Title 5, Book 7, of the Code of Laws of Spain... [the condemned] must be taken out of the Public Prison, where he has been held, with a halter around his neck, the town crier going before him to proclaim his crime, and when they arrive at the gallows he must be hanged upon it until he is dead... [quoted in Porteous 1937:861]

Colin, undoubtedly at the urging of a priest, confessed his crime and repented of his deeds prior to his execution. Some of the maroons guilty of lesser crimes were flogged with up to several hundred strokes and sent back to their masters (Porteous 1937:861-862). The Spanish regime succeeded in suppressing the larger bands of *cimarrónes*, but at the end of the century smaller groups of runaway slaves were still at large (K. Jones et al. 1993:47-48; also see Chapter 5).

As mentioned above, 40 persons were listed as residing in Barataria in the 1788 census. Of these 40 persons, nine were white females and 16 were white males, probably representing several families. Eleven inhabitants in Barataria were male Free Persons of Color. At least some of these Free Persons of Color may have been relatives of Pedro Bonne, a Frenchman who had settled at the confluence of Bayou Des Familles in 1774 (see Chapter 5). Bonne had several children by two of his slaves. If the Free Persons of Color listed in the census were Bonne's family, the lack of enumerated females seems unusual. Slaves in Barataria consisted of one female slave and three male slaves, indicating the rudimentary state of development that could have been attained in cultivation of the area by this date. Whatever the settlers had achieved was dealt continual setbacks. A major crevasse inundated Barataria in the autumn of 1796, and five Canary Islander families, consisting of 27 people, lost all of their crops and livestock. The Royal government of the colony provided them with succor in the form of one-quarter barrel of rice per person, at a total cost of 420 *pesos*. The correspondence of Juan Ventura Morales indicates that despite the food supplies provided these settlers, their misery was unrelieved (Martinez 1982:158). These five families were probably the great majority if not nearly all of the *Isleños* remaining in the area at this time. Flooding occurred repeatedly until a particularly severe inundation in 1802 drove most of the remaining inhabitants from Barataria. The only *Isleños* left on Bayou Des Familles after this date were María Olivares, widow of Pablo Ruiz, and the family of Francisco Sánchez. Among the non-*Isleños* remaining after the 1802 flood were Jean Joseph Jourdan and Martha Dauphin, a free woman of color (Swanson 1991:61, 101).

The Población de Barataria was an expensive failure for the Spanish colonial government that ultimately served no purpose but to drain resources. In human terms, the Canarios who volunteered themselves and their families for relocation in Louisiana were undoubtedly severely disappointed by the conditions of their new home. The physical want and tension of life in the crisis-stricken Canary Islands was supplanted by a different, but equal or worse, distress. Often sick from the climate and miasmic atmosphere, daunted by unfamiliar primeval forests, fens, and deep swamps, the *Isleños* in Barataria were subjected to hurricanes and floods that made a mockery of their attempts to provide for themselves. To many of the settlers, Barataria was no doubt a bitter experience, following upon great hopes of a new and better life for themselves and their families. Some probably despaired, and Barataria never had a church established (Swanson 1991:77) for the comfort of these traditional and pious people. Many of the *Isleño* families did eventually find a satisfying life in Louisiana, not in Barataria but in San Bernardo, New Orleans, or elsewhere, and became noted as truck farmers, fishermen, and livestock farmers. In their years of trial, the *Isleños* turned for comfort to the strong culture of their homeland, and sought to live surrounded by neighbors who shared their cultural inheritance. The strength of their folkways has allowed the Canary Islanders to retain their identity within Louisiana's rich cultural gumbo to the present day. However, as late as 1818, approximately 300 families of *Isleño* descent found loyalty to their Hispanic heritage more attractive than an identification with the United States, and availed themselves of

a Spanish offer to emigrate from Louisiana to Cuba (Parsons 1989:406), the last Spanish dominion in the Americas. This event is an interesting footnote to the long and remarkable history of Canario emigration to the New World, and to the singular episode of *Isleño* settlement in Louisiana.

CHAPTER 7
PREVIOUS INVESTIGATIONS IN THE STUDY AREA

Introduction

The Barataria Basin is archeologically well known, having witnessed numerous research projects in and around its borders. The Bayou Des Familles channel is, relatively speaking, one of the best surveyed waterways in Louisiana. Hundreds of sites have been recorded in the basin as a whole, and almost a hundred from Bayou Des Familles alone. Regrettably, although we have a considerable body of data concerning site distributions, we have less precise information concerning chronology, life ways, and information relevant to pursuing synthetic and integrative research. The theoretical emphasis has been on culture history and stratigraphic excavations, and the reporting of research has been sporadic and incomplete.

Beginnings of Archeology in the Barataria Basin

Professional archeological research did not commence in the Louisiana coastal zone until the 1930s. Prior to that time, there were a number of instances where archeological sites were mentioned or recorded. These data are historically interesting because they provide a record of the locations and conditions of a number of sites which have since been altered, destroyed, or eroded. These reports provide us with a better appreciation of the archeological landscape than we can have today, especially since it is evident that the destruction and alteration of Indian sites has not been limited to the twentieth century (Foster 1874; Swanson 1991:16-20; Figure 6).

The earliest record of the locations of Indian sites comes from an anonymous and undated map of the New Orleans area which shows the location of several shell middens, including the Bayou Villars (16JE68) and Chenier Grand Coquille sites (16JE46), as well as at least one other unidentified site on Bayou Barataria north and east of the study area (see Goodwin et al. 1989:Figure 4; Swanson 1991:60). Based on internal evidence, this map appears to date to the period ca. 1770-1780 (Swanson 1991:60), and it was likely rendered by Carlos Trudeau. An 1803 Trudeau map shows the location of the historic Ouacha and Chouacha villages on the southern shore of Lake Salvador, south of the study area (Figure 6). Two villages are shown, one belonging to the Ouacha, and located west of Bayou Perot, and one inhabited by the Chouacha, and located in the vicinity of the Temple site (16LF4). In 1874, J. W. Foster noted the presence of numerous archeological sites in the New Orleans vicinity, and specifically observed that "Along the banks of this bayou [Bayou Barataria] are vast shell accumulations, which for years... have been used for street grading and garden-walks in New Orleans. A constant trade in small sail-boats and barges is kept up, and this trade is fast exhausting these supplies" (Foster 1874:158).

By the middle of the 1930s, archeology was beginning to develop as a professional branch of study in Louisiana. In 1934, J.R. Czajkowski published a short article on excavations at the Little Woods sites (16OR1-5) in Orleans Parish (Czajkowski 1934). This research was funded by Federal relief moneys and cannot be said to be of especially great scientific value. One notable aspect of the work is important in retrospect. These excavations demonstrated the temporal priority of Tchefuncte ceramics relative to those identified today as Coles Creek (Czajkowski 1934). At roughly the same time, James A. Ford conducted a series of excavations and surveys in the Lower Mississippi Valley, and in 1936, he published a seminal book on the archeology of the central part of that region (Ford 1936). Ford's large scale synthesis was preceded by published work on his excavations at the Peck site (16CT1), and several short articles outlining the chronological sequence for the Lower Valley area (Ford

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1935a, 1935b, 1935c). Ford's work became the yardstick by which all other cultural sequences in the Lower Mississippi Valley would be measured (Neuman 1984).

In 1936, F. B. Kniffen, a cultural geographer, undertook an archeological survey in the eastern coastal zone. This research was designed to assist in the dating of geological features (notably waterways and associated features) by examining Indian sites associated with each of them (Kniffen 1936). Kniffen visited and made collections from 36 archeological sites in the Mississippi River delta area and formulated two chronologically distinct ceramic "complexes". The earliest of these two complexes was called Bayou Cutler, after the site of the same name (16JE3), and the other Bayou Petre, after the eponymous site in St. Bernard Parish (16SB11) (Kniffen 1936). Kniffen identified a number of ceramic traits which distinguished these two complexes, and he called attention to the similarities and differences between the coastal ceramics and those identified by Ford in the Lower Valley (Kniffen 1936). The effect of Kniffen's work was to incorporate the archeology of the coastal zone into the broader picture of Southeastern archeology which was emerging at that time. Kniffen's work also suggested that the cultural ties of peoples living in the coastal zone were northward up the Mississippi Valley.

Further professional research in the coastal zone was not accomplished until 1953-1954, when another cultural geographer, W. McIntire, undertook a study of the area "to learn more about prehistoric man in coastal Louisiana, and to use his cultural remains as an aid in unraveling some of the geological history of the deltaic plain" (McIntire 1954:1). This research was significant in geographic scope and in the extent to which it provided the benchmark for subsequent refinements of the culture history of the entire coastal zone (McIntire 1954, 1958b; Neuman 1984). Basing his culture historical framework on revisions of Ford's work ultimately published by Phillips, Ford, and Griffin (1951; Ford and Quimby 1945; Ford and Willey 1940), McIntire aligned the coastal zone culture history with that promulgated for the Lower Mississippi Valley (1954, 1958b). By the time McIntire's work was revised in 1958, a chronological framework had emerged which is still recognizable today. Special note should be made of McIntire's revision of the Bayou Cutler and Bayou Petre complexes, which were placed in the Coles Creek and Plaquemine periods, respectively. A coastal Troyville culture/period was recognized, along with Marksville remains. McIntire also noted the presence of moderate quantities of late prehistoric ceramics attributable in style or actual fabric to the Moundville [Pensacola] and Fort Walton cultures of the eastern Gulf Coast region (McIntire 1954, 1958b).

McIntire's work also involved a great deal of archeological survey and some limited testing and soil coring. No sites on Bayou Des Familles were visited, but McIntire did investigate a number of sites on Bayou Barataria, primarily south of its confluence with Bayou Villars (Gagliano et al. 1979; McIntire 1958a). Based on his analysis of the ceramics from the area, McIntire (1958a:74) suggested that the lower course of Bayou Barataria had supported an important Troyville occupation. More recent archeological research in the lower Barataria region indicates that many of these Troyville sites may actually date to the Marksville period. McIntire's data also showed that many of the sites in the Barataria region supported extensive occupations through much of the prehistoric period, and that there was an important late prehistoric component located at and around the Fleming site (16JE36).

There was a lengthy hiatus in research following McIntire's groundbreaking investigations. Research in the Louisiana coastal zone was intermittent, and the results largely unpublished. In 1970, Philip Phillips published his monumental synthesis of the archeology of the Lower Mississippi Valley, and he included in it a reinterpretation of the prehistory of the coastal zone (Phillips 1970). Working largely with data provided by McIntire and information from the state archeological site files, Phillips organized the regional archeology into a series of temporally and spatially distinct phases. His analysis provided the analytical and culture

historical framework for the region to this day. It is important to note, however, that Phillips synthesis was provided from a more northerly perspective. That is, his own archeological research was conducted in the Yazoo Basin north of Vicksburg, and as a result, he utilized a culture historical model based on his own experience in that region. The archeology of the coastal zone was fit into that system without specific regard to the relationship between the two respective culture historical sequences (Gibson 1984; Phillips 1970).

The pace of archeological research in the coastal zone increased in the 1970s, as more research was undertaken and as Federally mandated cultural resources management studies were implemented. General surveys of the region were undertaken by Neuman (1977), and major excavations were conducted at several large sites (Bruly St. Martin [16IV6], Morton Shell Mound [16IB3], Bayou Jasmine [16SJB2]) in and around the region (Byrd 1974; Neuman 1976; Springer 1973). Archeological surveys of the Gulf Intracoastal Waterway recorded several archeological sites in the Barataria Basin near the Bayou Des Familles channel (Gagliano et al. 1975). In 1975, J.R. Shenkel undertook a study of several sites in the Bayou Des Familles and Bayou Segnette Waterway area (Shenkel 1975). Shenkel's research led to the identification of two sites in the vicinity of the Camino site. One of these was 16JE62, located roughly 540-600 m north of 16JE223, and the other was 16JE61 (which is probably the same as 16JE172 [Beavers 1982b: Site UNO 20]), located south of 16JE223 in the Barataria Unit, Jean Lafitte National Historical Park and Preserve. The only data recorded for these sites were their locations and that they were shell middens. No culture historical attributions were made at the time they were discovered (Shenkel 1975; Speaker et al. 1986).

Archeological research at the Big Oak and Little Oak Island sites (16OR6, 16OR7) in Orleans Parish was also begun in the early 1970s (Shenkel 1981). Amateur investigations at the Fleming (16JE36) and Isle Bonne (16JE60) sites were conducted between 1974 and 1976 (DeMarcay n.d.; Holley and DeMarcay 1977). These sites provided important evidence for continuity of occupation in the Barataria Basin and suggested the significance of the so-called Barataria complex of sites at the confluence of Bayous Barataria and Villars. This complex was hypothesized to represent a long-term habitation area and late prehistoric mound complex, and it was possibly the central community in the lower Barataria region (Holley and DeMarcay 1977).

Archeologists from Coastal Environments, Inc., conducted an in-depth archeological survey of parts of Bayous Barataria, Rigaud, and Segnette, adding 34 new archeological sites to the regional inventory (Gagliano et al. 1979). Significantly, this work presented a detailed and influential paleogeographic reconstruction of the region. Archeological data were combined with then-current geomorphic evidence to show the nature of habitation and its shifts through time as river courses and streams changed their direction, flow, and consequently, their environment. Archeological data from along Bayou Des Familles were minimal at this time, and consisted principally of mention of the Coquilles site (16JE37), which was at that time beginning to be investigated by Richard Beavers of the University of New Orleans (UNO).

The research undertaken by UNO as part of the planning of Jean Lafitte National Historical Park and Preserve represents the beginning of the intensive investigations of the Bayou Des Familles channel. The UNO research program consisted of survey, initial testing at the Coquilles site, and more extensive excavation and mitigation in advance of construction at the Coquilles site (Beavers 1982a, 1982b). Survey was initially conducted by Betty Loumiet in 1975-1976, and this was followed by a series of excavations at the Coquilles site (specifically in the mound or mounds on the east side of Highway 45). Excavations were also undertaken at this time at the Boudreaux site (16JE53) near Crown Point (Beavers 1982b). Excavations of the non-mound area of the Coquilles site were conducted by the UNO research team and initially consisted of a three percent sample. This was later supplemented by additional excava-

tions to bring the total area excavated to five percent (Beavers 1982a). Further excavations were undertaken at the Coquilles site by National Park Service personnel (T. Birkedal, personal communication 1994). These excavations consisted of further testing of the parking lot area and mitigation in advance of the construction of a water line placed on the west side of Highway 45 and parallel to the road. Data from these excavations were briefly summarized by Giardino (n.d.), and specialized reports on ceramics (Giardino 1984a), fauna (DeMarcay 1985), flora (Toll 1985), pollen (Clary 1985), and radiocarbon dates (T. Birkedal, personal communication 1994) were submitted at the same time. No final report on this work has been issued, and the data are difficult to interpret in their present form.

Beginning in the spring of 1981, a series of intensive surveys of the banks of Bayou Des Familles were undertaken to locate sites in the park area (Beavers 1982b). Field procedures consisted of "close order pedestrian transects along the natural levee ridges" (Beavers 1982b:72). The survey coverage was not specified in terms of total area or transect spacing. Survey was conducted parallel and perpendicular to the bayou channels, however, although how far the perpendicular transects extended is uncertain (Beavers 1982b:72).

The results of this phase of intensive research were that the Coquilles site was well sampled, and a series of radiocarbon dates were obtained. Excavations at Coquilles and the Boudreaux site suggested the presence of notable Marksville and "Troyville" period occupations in the area (Beavers 1982a, 1982b; Giardino 1984a, n.d.). Excavations at the Coquilles site were argued to indicate the presence of a mound and village community center located at the confluence of Bayous Des Familles and Coquilles, with contemporary villages located up and down both bayous and also farther to the south (Beavers 1982a, 1982b). Surveys of the Bayou Des Familles and Bayou Coquilles area recorded 57 sites, and eight of these were tested with excavation. Most of the sites were small and shallow; many could not be adequately dated even when excavated (Beavers 1982a, 1982b). Beavers noted that the settlement pattern was highly linear, and he associated this distribution with the circumscribed environment where settlement choice was constrained by the availability of high ground (1982b). Survey data from the Bayou Des Familles channel area indicated that the occupation span was virtually unbroken from Marksville into the early historic period (Beavers 1982b; Swenson 1991). Several interesting gaps were indicated by these data, however. Most notably, there was a relative dearth of Coles Creek period sites. Marksville and "Troyville" period occupations were more common, and later Mississippi period habitations were also noted. Other than the occupation at the confluence of Bayous Des Familles and Coquilles, however, no large sites were found. Sites were also only found along the front of the levee near or on the crest of the ridge. No prehistoric sites were recorded on the levee backslope.

The data provided by the UNO survey were utilized for several regional syntheses, notably inventories of archeological data in the park area and also in Jefferson Parish (Goodwin et al. 1985; Holmes 1986; Speaker et al. 1986). These reviews, however, did not add any substantial new data to the existing archeological record. Speaker et al. (1986) argued that 11 of the sites listed by Beavers (1982b) should be reclassified as "non-sites" since they were likely to represent historic disturbances, dredge spoil, or natural shell deposits.

In 1986, Kelley and Bryant undertook a survey of the Estelle Tract, a 353 ha area located on the east bank of Bayou Des Familles north of the Jean Lafitte National Historical Park and Preserve. This research consisted of literature review and selected sampling of the levee area by pedestrian survey parallel and perpendicular to the channel. Seven new sites were located, and several previously reported site localities were revisited. These sites are located between one and two km north of 16JE223. Results of this work showed that most of the sites in the Estelle Tract were located within 70 m of Bayou Des Familles. Three transects placed perpendicular to the bayou failed to locate new sites (Kelley and Bryant 1986). One previously reported site, 16JE73, could not be relocated. This site, which was initially found

during an examination of spoil deposits from excavations for the Lafitte-Larose highway, is not closely associated with the present channel of Bayou Des Familles. Kelley and Bryant suggest that this site was probably associated with a small crevasse channel emanating from the bayou, which would explain both its location and the fact that it was evidently not a shell midden (1986:28). Of the seven new sites recorded during this survey, the average size was 10-15 m wide and 10-20 m long. The cultural deposits ranged from 7-35 cm thick (Kelley and Bryant 1986:28). None of these sites could be adequately dated, other than to note that their occupations dated to the Neo-Indian era. Baytown Plain pottery was found at each site but was not sufficiently diagnostic to date these sites. One of the sites visited during this survey was considered to be the same site identified in the state archeological site files as 16JE62 (Kelley and Bryant 1986:31). The only existing data for this site was its location, which is approximately 600-800 m north of 16JE223. According to Kelley and Bryant, 16JE62 consists of a *Rangia* scatter over an area roughly 10 x 15 m, with a midden roughly 28 cm in thickness. No prehistoric artifacts were found at the site, but a nineteenth-century British wine bottle base was found on the surface (Kelley and Bryant 1986:31).

Further research in the Bayou Des Familles area was undertaken in 1987 by Poplin and Goodwin, who conducted an intensive investigation of the 4.8 ha parcel of land where the park headquarters was constructed. Although the area was surveyed and an extensive auger and shovel test program was carried out, this research did not report any new sites within the survey area, although a small shell deposit (16JE195) was discovered outside of the project boundaries. No prehistoric remains were found at this site, and it is not certain if this is an Indian site or not (Poplin 1987)

In 1988, Betsy Swanson compiled a study of historical land use within the Barataria Unit of Jean Lafitte National Historical Park and Preserve (Swanson 1988, 1991). This report demonstrated the intensity of historical land use in the Bayou Des Familles channel area and suggested that the entire region was so altered that it could not be considered anything but a human-made landscape (1991:9-22). Swanson also analyzed the settlement patterns of the historic period occupations of the area, and she conducted pedestrian survey (without subsurface testing) with the goal of identifying historic sites and features located within the park. Among the locales Swanson (1988) identified were six sites which appeared to be associated with the *Población de Barataria,* the Canary Islander settlement dating to the late-eighteenth century. These sites were on the natural levee but located away from the present-day channel of Bayou Des Familles along the *Camino Real* (Yakubik 1989:Figure 2).

Yakubik (1989) subsequently conducted National Register of Historic Places (NRHP) test excavations at these six late-eighteenth-century sites (16JE197, 16JE198, 16JE199, 16JE214, 16JE215, and 16JE216). Screened shovel tests were excavated at 5 m gridded intervals at each site to define horizontal extent as well as to identify artifact concentrations. One hundred percent surface collections were made, and the locations of all surface artifacts were piece plotted on the site map. At least one 1 x 1 m test unit was excavated at each of the sites. With the exception of 16JE216, which is located within a nineteenth-century plowed field, the sites exhibit small (approximately .3 to .75 m in height and 10 to 15 m in diameter) mounds which presumably provided elevated areas for housing, and shallow depressions that were interpreted as borrow pits for *bousillage* manufacture. The undisturbed sites range in size from 26 x 34 m (16JE214) to 48 x 38 m (16JE197). 16JE216 measures 44 x 40 m (Yakubik 1989).

One architectural feature was discovered at 16JE214. It consists of a mosaic-laid area of broken bricks that was interpreted as a portion of a support for a wood sill. Adjacent to the support was a prepared clay floor which lay on top of a charcoal layer. The charcoal was interpreted as a primitive form of waterproofing. Occupation debris collected from beneath

the floor (bone, brick, and mortar) strongly suggested multiple construction episodes at the site (Yakubik 1989:60-61).

Artifacts collected from the sites included late-eighteenth- and early-nineteenth-century ceramics, glass, wrought nails, brick, daub, animal bone, gunflints, lead shot, smoking pipe fragments, and buttons. The composition of ceramic assemblages varied between the sites. The collection from 16JE198 consisted primarily of faience and European coarse earthenwares, and only one sherd of creamware was collected from this site. By contrast, the assemblage from 16JE197 consisted primarily of creamwares and pearlwares, while relatively few coarsewares and only one sherd of faience were collected. 16JE216 proved to be the richest site in terms of artifact yield, and fortunately, an intact portion of midden was discovered adjacent to the junction of two field ditches. By contrast, 16JE199 proved to be virtually sterile; it yielded only one piece of creamware, a sherd of Bell Plain *var. St. Catherine*, a nail, and a few brick, daub and bone fragments. A *Rangia* midden is present at this site, but no artifacts were found in association with the shell (Yakubik 1989).

A few aboriginal sherds were also collected from 16JE197 and 16JE198, but the largest collection of Native material came from 16JE216. A plurality of the 56 sherds collected here were assigned to the type Maddox Engraved (Giardino 1989). Fuller (1991) has observed that the "Maddox Engraved" in late prehistoric and early historic contexts in the Barataria Basin is not typologically like true Maddox in that it lacks wide line, u-shaped incisions bordering crosshatched design elements. Fuller proposes the new type, Barataria Incised, to account for this material, and suggests that it represents a marker for the contact period (1991:5-7). Whatever the typological assignment, however, it is certain that this material is associated with historic period components in the area. Excavations at the now well dated Bayou Des Familles site (16JE218), however, also make it clear that this type (or types) have been used in the region since the late fourteenth century. Similar statements can be applied to the type Buras Incised, which has also been recovered at sites 16JE216 and 16JE218.

The European material collected at the sites confirmed that they were occupied during the late-eighteenth-century, and that two of the sites (16JE197 and 16JE214) continued to be occupied into the early-nineteenth century. This, along with the similarities between the sites and the regular intervals of their spacing seemed to verify that these sites were associated with the *Isleño* settlement on the bayou. Seriation and mean ceramic dating of the material from the sites strongly suggested considerable movement of the colonists within the settlement. Differences in the collections from the individual sites suggested that some sites were only inhabited for a brief period prior to abandonment, and that abandoned, briefly occupied house sites may have been reoccupied by settlers remaining in the colony (Yakubik 1989:117-131). This pattern would be consistent with the history of the settlement and its constantly dwindling population (Chapter 6). The sites were recommended as being eligible for nomination to the National Register of Historic Places.

Subsequent to Yakubik's test excavations, Swanson identified an additional nine sites which she interpreted as being *Isleño* house sites and which she designated "Colonial Sites 7-15"(1991:88-91). Artifacts from surface collections at four (Colonial Sites 11, 12, 13, and 15) of these sites were analyzed by Fuller (1991). Each of the sites is described in detail below, since Fuller (1991) and Swanson (1991) provide the only reported results of investigations at *Isleño* sites other than Yakubik (1989) that are currently available. None of the sites have been assigned Louisiana State Site Numbers as of the time of this writing.

Features at Colonial Site 7 include a mound measuring 6 m in diameter and .3 m in height, and two depressions. Surface artifacts consisted of single sherd of creamware and brick. The site was interpreted as a possible site of a slave cabin owned by the early-nineteenth-century occupant of 16JE197, the Widow Maria Olivares (Swanson 1991:88). Colonial Sites 8, 9, and 10 also have mounds ranging from 7 to 12 m in diameter and .4 to .5

m in height. Colonial Site 8 is located between 16JE215 and 16JE198, while Colonial Site 9 is north of 16JE215. Colonial Site 10 is reported to be northeast of Colonial Site 7. Few surface artifacts were noted at these sites. Colonial Site 8 yielded one creamware sherd, one blue hand-painted pearlware sherd, and two brick fragments, while Colonial Sites 9 and 10 exhibited a piece of daub and a brick fragment, respectively (Swanson 1991:88).

Colonial Sites 11-15 are located southeast of 16JE216. The five sites and 16JE216 are all spaced at approximately 3 arpent intervals along the *Camino Real*. Colonial Site 13 is closest to 16JE216, and like the latter site, had been disturbed by plowing. The assemblages of the two sites were also similar. Historic ceramics collected from the surface included fragments of what is probably Saintonge White-Slipped and Green-Glazed Pink Earthenware ('soft paste, green lead-glazed, w/underglaze white slip" [Fuller 1991:Table 5]), Spanish Olive Jar ('hard gritty paste, green interior lead glaze" and "hard gritty paste, unglazed" [Fuller 1991:Table 5]), and Provence Jar ('hard gritty paste, yellow interior lead glaze" [Fuller 1991:Table 5]). Interestingly, four sherds of Puebla Blue on White majolica were collected. None of the other *Isleño* sites have yielded majolica, and majolica is generally very rare in southeastern Louisiana assemblages (Yakubik 1990). In addition, aboriginal sherds were relatively abundant on the surface, and four pieces of "Maddox Engraved" were collected (Fuller 1991:Table 5). Other material from the site included glass, brick, mortar daub, ground sandstone, and bone (Fuller 1991:Table 5). The artifacts were found concentrated in an area measuring about 30 m in diameter. In addition, sherds of Baytown Plain were collected from "a disturbed shell concentration across the road from Site 13" and an area

> ...described by Swanson as a low mound with few *Rangia* and oyster shells. She interpreted it as the remains of a buried midden deposit that had been piled up during construction of a raised bed for planting a pecan tree [Fuller 1991:14].

Fuller (1991:14) interpreted the latter deposit as dating to the period A.D. 200-700.

Colonial Site 11 was also disturbed as a result of construction of the old Barataria Road. A linear rise measuring 9 x 45 m is present east of the road (Swanson 1991:89). Glass, metal, brick, and bone were collected from the surface, as was one historic aboriginal plainware sherd. Sherds of this type ("compact paste, abundant fine sand, polished surfaces, and bowl forms" [Fuller 1991:Table 1]) were classified by Giardino (1989) as Baytown Plain *var. Jean Lafitte*, but Fuller (1991:Table 1) instead suggested naming a new type or this ware. Fuller (1991:7) observed that the artifacts from the site were consistent with what might be expected from a late-eighteenth-/early-nineteenth-century domestic occupation.

Colonial Sites 12, 14, and 15 all exhibited mounds. The mound at Colonial Site 12 measures 12 x 18 m (Swanson 1991:89), and the artifacts from the site (a sherd of creamware, a late-eighteenth-century bottle lip, brick fragments, metal, and a tumbler base) are compatible with a late-eighteenth-/early-nineteenth-century domestic occupation (Fuller 1991: 9). Several aboriginal plainware sherds found north of the site, four of which were associated with a scatter of *Rangia,* "appear to be prehistoric"(Fuller 1991:9). By contrast, the artifacts from Colonial Site 15 seem to date to the twentieth century, and Fuller (1991:23) noted that the brick and mortar appeared to be more recent than that from the other sites he examined. *Rangia* and oyster shell were scattered on a mound measuring 12 m in diameter and which was located adjacent to three small depressions (Swanson 1991:90). One sherd of Baytown Plain *var. unspecified* was collected from the surface of the mound. Fuller (1991:23) suggested that this site is the remains of a hunting camp, and that the apparent prehistoric midden at the site would have provided a good foundation for the camp. Finally, the mound at Colonial Site 14 measures 15 x 23 m and is approximately 1 m in height. Brick fragments and *Rangia* were noted on the mound, but no surface collection was made. However, a nearby shell midden yielded sherds which Fuller (1991:23) dated to ca. A.D. 1000-1500 and A.D. 200-700.

Since 1993, investigations have been conducted within the Barataria Unit of Jean Lafitte National Historical Park and Preserve. This work was co-sponsored by Jefferson Parish and the Delta Chapter of the Louisiana Archaeological Society, and Dr. Charles Pearson served as Principal Investigator. Thurston Hahn and Betsy Swanson supervised fieldwork, with the former overseeing archeological investigations. The purpose of these investigations was updating the National Register nomination form of the Historic District for the Barataria Unit of Jean Lafitte National Historical Park and Preserve to include the *Isleño* sites and other resources located in their vicinity. The work is being completed at the time of this writing, and information on the project was provided by Thurston Hahn (personal communication to Yakubik, 1995) and Swanson (1995).

Sites were searched for within areas where Betsy Swanson projected house sites should be located based on her hypotheses concerning the spacing of the settlement. When sites were located, metal detectors and screened shovel tests were utilized to define their extent. Surface collections were also made, and topographic maps of the sites were drawn. Sites 7-15, which had previously received no subsurface testing, were revisited. Also, 16JE197, 16JE214, and 16JE216 were reexamined. These were the three richest sites identified in Yakubik's (1989) NRHP test excavations, and the goal was to investigate whether any additional use areas associated with the presumed house sites could be identified. Finally, an additional six Spanish Colonial sites were identified. The majority of these are located between 16JE199 and 16JE216, and all of those are located north of the pecan orchard within this area. None of these sites have been assigned Louisiana State site numbers (T. Hahn, personal communication to Yakubik, 1995, Management Summary to NPS; Swanson 1995).

All of the sites yielded material consistent with late-eighteenth-century occupation, but with the exceptions of 16JE197 and the associated Colonial Site 7, artifact density is very low. Thurston Hahn noted that it would have been impossible to locate some of the sites without the use of the metal detector (personal communication to Yakubik, 1995). Recovery of no more than 10 to 15 sherds per site was not unusual. A plurality of the ceramics collected were creamware, with lesser amounts of coarseware, pearlware, and tin-enameled earthenware. In addition, aboriginal ceramics were found on most sites, but their association with the eighteenth-century components is uncertain. All of the sites that had not previously been disturbed have evidence of mounds, but most of these measure no more than 20 cm in height. Additional mounds were discovered at 16JE197 and 16JE214. Some of the sites include depressions that are interpreted as borrow pits for bousillage manufacture, but the depressions at other sites are clearly the result of tree falls. Some of the sites have *Rangia* shell scattered on them, but shell middens are not necessarily present. Generally, the artifact scatters at the sites measure about 15 m in diameter. One site, Colonial Site 10, yielded no artifacts and no positive metal detector readings. It is not considered an *Isleño* site (T. Hahn, personal communication to Yakubik, 1995, Management Summary to NPS; Swanson 1995).

Architectural features (other than the mounds themselves) were not noted at any of the sites (Swanson 1995). However, a lens of charcoal was evident in the stratigraphy of one mound. This was interpreted as evidence of clearing by burning off the vegetation (T. Hahn, personal communication to Yakubik, 1995). This may be an alternate interpretation for the lens of charcoal found beneath the structure at 16JE214 (above).

The northernmost sites were all clearly located to the west of the *Camino Real*, but the relationship of the road to the southern sites was less clear because of cultivation and other disturbances. In general, the sites were spaced at approximately 3 arpent intervals (Swanson 1995), but the sites located in the northern portion of the park may have been somewhat closer. The northernmost site, Colonial Site 17, was located right at the V-levee and directly opposite 16JE223. A low mound extending under the V-levee was mapped in this area (Figure 15). Few artifacts were found in association with this mound. Thurston Hahn (personal communication to Yakubik, 1995) believes that the actual house site may be under the levee or

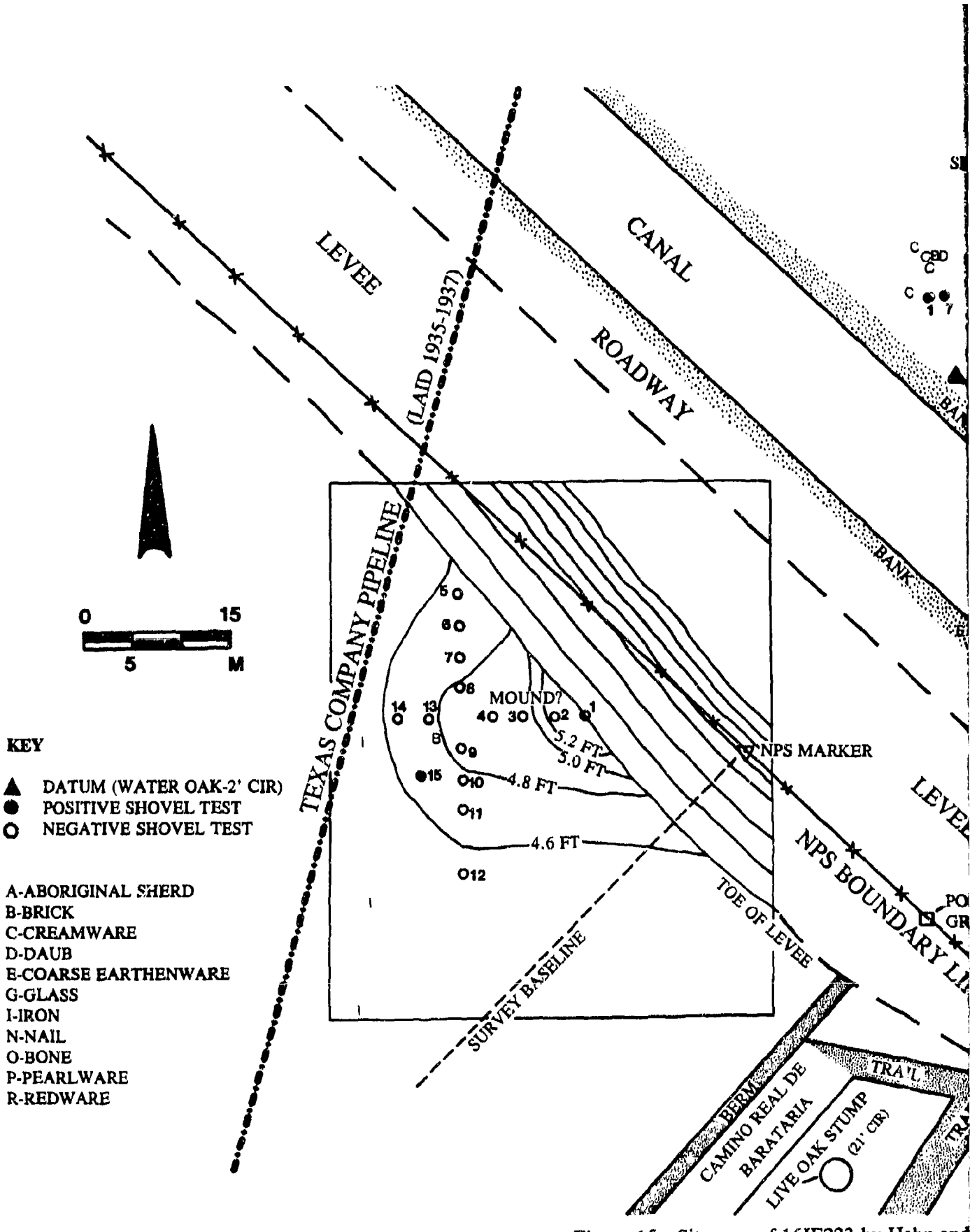
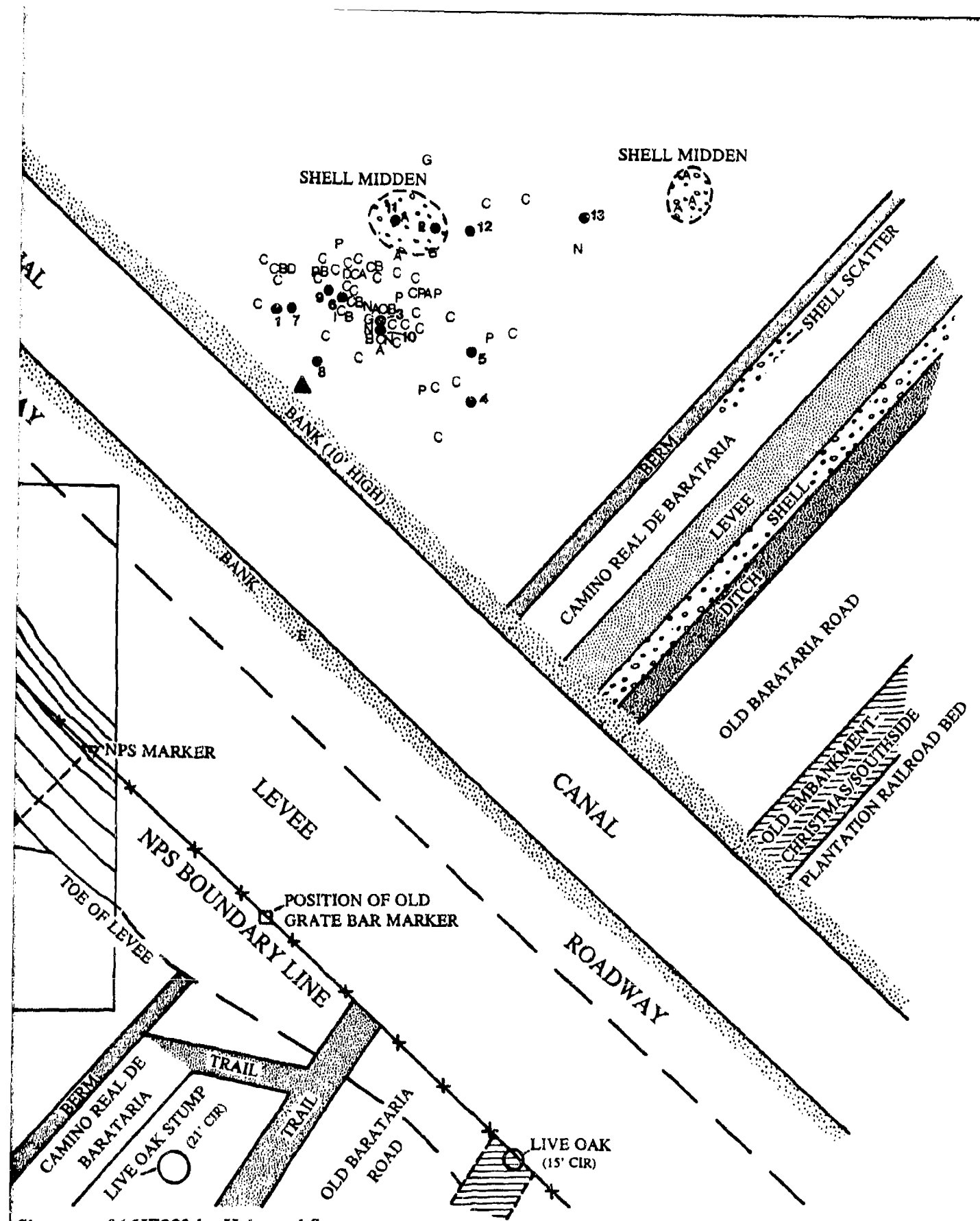


Figure 15. Site map of 16JE223 by Hahn and



Site map of 16JE223 by Hahn and Swanson.

formerly within the area now occupied by the canal. Betsy Swanson evidently collected one sherd from within the canal bank in this area (T. Hahn, personal communication to Yakubik, 1995).

In addition to the *Isleño* sites, approximately a dozen other sites were examined during this investigation. These include aboriginal sites, *Rangia* scatters that did not yield aboriginal sherds, and locales that turned out not to be sites. Eight prehistoric sites (Sites 7A, 7B, 12A, 13A, 14A, 18A, 18B, and 18C) were identified. Maps of the sites are currently being prepared for submission to Jean Lafitte National Historical Park and Preserve (T. Hahn, personal communication to Yakubik, 1995, Management Summary to NPS).

In 1988, concurrent with Yakubik's test excavations at the *Isleño* sites, Franks and Yakubik conducted a survey of a 26 ha tract adjacent to Bayou Des Familles in the Barataria Unit of Jean Lafitte National Historical Park (Franks and Yakubik 1990). The survey by Franks and Yakubik resulted in the identification of eight new archeological sites along the banks of Bayou Des Familles. One of these sites was a historic steam engine foundation associated with Christmas Plantation, but the other seven contained prehistoric components. One-by-one m test excavations were placed at five sites located on the east bank of Bayou Des Familles (16JE200, 16JE201, 16JE202, 16JE204, and 16JE206), and at two sites on the west bank (16JE163 and 16JE164) (Franks and Yakubik 1990:Tables 3-4). Results of these excavations suggested that most of these occupations dated to the later prehistoric period. Giardino (in Franks and Yakubik 1990:80-99) identified plain ceramics as Baytown Plain, *vars. Reed* and *Satartia*, but none of the decorated wares could be associated with these plain varieties. The bulk of the identified plain and decorated pottery date to the later prehistoric periods, perhaps even into the historic period (Franks and Yakubik 1990; Fuller 1991; Yakubik 1989). At 16JE163, a late Bayou Petre-like component was identified based on the presence of decorated pottery types Anna Incised, *var. Anna*; Coles Creek Incised, *var. Hardy*; L'Eau Noire Incised, *var. Australia*; and Maddox Engraved, *var. unspecified*; and unidentified (*sic*) zone punctate (probably Buras Incised). Associated plain pottery consists of Baytown Plain, *var. Jean Lafitte*, and Addis Plain, *vars. Addis* and *St. Catherine*. Giardino (in Franks and Yakubik 1990:92) argues for a very late, ca. eighteenth-century, date for this component, although this interpretation can be questioned. All the types listed for site 16JE163 are present in earlier Mississippi period precontact era components, and they were not recovered in association with contact period or later artifacts. The similarity of the ceramic assemblage at 16JE163 with that found at the Bayou Des Familles site (16JE218, below) underscores the probability that this site is not a historic period occupation. However, it should be noted that equally similar-looking assemblages have been recovered in association with the *Isleño* sites discussed above (Fuller 1991; Yakubik 1989). Franks and Yakubik reiterate Beavers earlier consideration about the linearity of prehistoric (and historic) settlement on Bayou Des Familles, and further note that there are essentially rank orders in the settlement size, such that size decreases away from the confluence of Bayous Des Familles and Coquilles (the location of the Coquilles site). Similarly, site size decreases south of that confluence (Franks and Yakubik 1990:Figure 26).

Other recent work in the Bayou Des Familles region consists of a survey of the route of the proposed impacts associated with the West Bank Hurricane Protection Levee by Goodwin et al. (1989). This research consisted of intensive pedestrian survey and shovel testing of an approximately 138 ha parcel running initially perpendicular to Bayou Des Familles and then turning north to follow the V-levee to the Estelle pumping station (Goodwin et al. 1989:Figure 1). The survey corridor on the east side of Highway 45 was 200 m wide and was covered by survey parties in linear transects spaced ca. 20 m apart and placed parallel to the axis of the V-levee. Shovel tests were placed every 50 m along the transects, and were offset from transect to transect. A total of 1382 shovel tests was excavated during the survey (Goodwin et al. 1989:37). Shovel tests were excavated to sterile subsoil, and all material was passed through

6.44 mm (.25 inch) mesh. During this survey two sites were located, a historic saw mill (16JE217) and the Bayou Des Familles site (16JE218), a prehistoric *Rangia* shell scatter located about 130 m to the northwest of 16JE223.

At the time the Bayou Des Familles site was first identified, it consisted of a scatter of *Rangia* shell on the surface of the levee adjacent to Bayou Des Familles. Goodwin et al. (1989:40) observed that the site was located approximately 40 m southeast of the bayou and roughly 25 m northeast of the V-levee drainage canal. Based on their investigations at the time of discovery, Goodwin et al. indicated that the site was oval in shape, and measured roughly 27 m north/south and 33 m east/west, with a total area encompassing approximately .08 ha (1989:40, Figure 11). A single shovel test placed in the site at the time of initial discovery yielded 19 aboriginal potsherds and indicated that there was a buried *Rangia* midden approximately 12 cm thick.

After the initial discovery of the site, Goodwin et al. conducted NRHP test excavations. This phase of work consisted of the excavation of 42 shovel tests, 12 auger tests (using a 5 cm Dutch auger), and six 1 x 1 m test excavation units (Goodwin et al. 1989:40, Figure 11). The shovel and auger tests demonstrated that the site consisted of a stratified sequence of deposits resting on sterile natural levee soils. The upper stratum was a 3-10 cm thick layer of humus mixed with scattered shell. Beneath this layer was a shell midden composed of *Rangia* and which was generally anywhere from 10-14 cm thick. A level of silty clay underlay the shell midden; this layer was of "varying thickness," but evidently did not exceed roughly 5-7 cm below the base of the midden. Culturally sterile natural levee deposits were found to underlie the entire site and could be followed out beyond the edges of the shell midden (Goodwin et al. 1989:40, Figure 12). These initial subsurface tests indicated that the cultural deposits extended between 3-5 m beyond the edge of the visible shell scatter.

A total of 222 aboriginal ceramic sherds were recovered during test excavations. These sherds were classified in the type-variety system by Goodwin et al. (1989). The classified decorated pottery included types and varieties assignable to the Baytown, Coles Creek, and Mississippi periods (Goodwin et al. 1989:54-63). The ceramics from the site were said to indicate a late Coles Creek Plaquemine (sic) occupation, although it was acknowledged that the identified diagnostic ceramics could indicate a considerably earlier occupation (Goodwin et al. 1989:62-63). Reanalysis of the ceramics by Kidder (1995:Table 4) did not substantiate the presence of Baytown or Coles Creek period occupations. This highlights the difficulties of sorting and identifying ceramics with very low frequencies of decorated sherds. The simple reality is that in some cases archeological context provides the only adequate means of classifying plain ceramics (Phillips 1970:47-48)

Although the site showed some evidence of historic or recent disturbance, test excavations suggested that the bulk of the site maintained its stratigraphic integrity and could be expected to yield important evidence concerning prehistoric subsistence, seasonality, and settlement organization. Therefore, the site was recommended as being eligible for inclusion on the National Register of Historic Places. Because the site was scheduled to be impacted by construction activities associated with the Hurricane Protection Levee, archeological data recovery was recommended.

Archeological data recovery at 16JE218 was conducted in 1994 (Kidder 1995). Phase 1 investigations consisted of site mapping and the excavation of 28 randomly placed 1 x 1 m excavation units. The units were excavated in 5 cm levels within natural strata. Excavated soil was water screened on site through 1/4" mesh. Ten liter flotation samples were taken from each culturally positive natural stratum excluding topsoil. In addition, all feature fill was floated. All material recovered during flotation was saved and provided the samples for faunal and floral analysis (Kidder 1995:95-96).

Phase 2 of the fieldwork entailed mechanical block excavation. Block excavations were placed across the site in accordance with the results of the sample excavation units and the course of the construction impact zones through the site. Excavation blocks varied in size and shape, but they collectively encompassed a total area of 480 m^2. Excavation of the block areas proceeded in two stages. The topsoil first was removed by a backhoe to the top of the shell stratum. Hand excavation and shovel skimming were used to complete horizontal clearing. Each of the features discovered at this stage were mapped and excavated. The remaining shell midden matrix was then mechanically removed, and a plan of the features at the base of the midden was prepared. These features were then excavated (Kidder 1995:96, 101).

In addition, four test trenches up to 4 m wide and 10 m long radiating out from the site were mechanically excavated beyond the mapped portion of the shell midden. It was hoped that this trenching might reveal nearby but spatially discreet cultural loci. No cultural deposits were found beyond the site, however (Kidder 1995:101).

The largest number of features found at the site were interpreted as localities where fires were constructed rather than formal hearths. These were concentrated in the NW quadrant of the site near the edge of the midden, and in the SW quadrant of the site near or on the crest of the midden. The functions of other features remain enigmatic; these did not cluster in any evident pattern. Most of the features were found in the western half of the site, and artifact density was greater in this area. Small patches of shell and refuse dumped just at the edge of the main midden, in conjunction with the presence of small but notable numbers of sherds found outside of the midden, suggests the growth of the midden occurred by progressive dumping episodes along the edges of the site. The irregularity and the relatively random structure of the site supports the idea that the site was occupied intermittently over a number of years (Kidder 1995:255, 259).

Radiocarbon dates and artifactual remains indicate that 16JE218 dates to the late prehistoric period, ca. A.D. 1300-1500, and can be identified with the Barataria or Bayou Petre phase in the coastal zone. The site was likely a short term, probably seasonal occupation during the Spring or Summer. The population occupying the site must have been relatively small, perhaps a single family or even single individuals. Paleoethnobotanical analysis indicates the focus of the occupation appears to have been the cultivation of maize, possibly for consumption at the site or for export to nearby contemporary mound communities farther south in areas where maize could not have been grown. The absence of houses and the lack of extensive features associated with the shell midden indicates that the site structure was simple and undifferentiated. This interpretation leads us to suggest that the occupants of 16JE218 were of similar social and political status (Kidder 1995:361-362).

Four months after data recovery had been completed at 16JE218, the multicomponent Camino site (16JE223) was discovered by Betsy Swanson and other members of the Delta Chapter of the Louisiana Archaeological Society. A site map was prepared with compass and tape (Figure 15). Vegetation was removed from the site surface with rakes. Artifacts found on the surface following raking were piece plotted on the site map and collected. Thirteen shovel tests were excavated at the locations of positive metal detector readings, and all yielded artifacts. The assemblage collected from this investigation has been included in the analyses in Chapter 10.

The Camino site was not located during Goodwin et al.'s (1989) survey, but this is not surprising given the nature of the site. Surface visibility of the site was extremely poor as a result of heavy leaf cover overlying a very sparse surface scatter of artifacts and shell. The maximum extent of the site was 30 x 30 m, but the site was irregular in plan and only encompassed approximately 600 sq m. The *Rangia* midden present at the site is even smaller still (4 x 9 m at its maximum extent). In addition, subsurface distribution of artifacts at the site is

remarkably uneven. A negative shovel test was excavated between the two richest shovel tests at the site during data recovery. Thus, the site could have easily been missed during systematic shovel testing. Given the small size of the shell midden at 16JE223, it is unlikely that it would have been discovered during transect shovel testing. It is not surprising that this small site was missed during Goodwin et al.'s survey given the transect and shovel testing intervals used.

By contrast, the Camino site was easily located when shovel tests were excavated at 10 m gridded intervals along approximately 200 m at the crest of the natural levee within the V-Levee Floodwall construction corridor during the current data recovery effort. However, even shovel tests at gridded 5 m intervals did not reveal the presence of the small, buried shell midden, although a few aboriginal sherds and *Rangia* fragments were found in shovel tests with historic artifacts. Thus, even shovel testing at extremely close intervals cannot necessarily insure the discovery of all sites with little or no surface visibility.

CHAPTER 8
TRANSECT SURVEY

The Scope of Services (Appendix I) required transect survey from the northern edge of the existing V-levee canal to the parallel northern limit at the project right-of-way between Levee Stations 19+00 and 26+00. (Plate 1) The right-of-way boundary is 290 feet (88.5 m) from the centerline of the V-levee. The actual distance from the northern edge of the canal to the northern right-of-way boundary is about 58 m at the western limit of the survey parcel. Six parallel transect lanes spaced 10 m apart were run through the survey parcel, parallel to the right-of-way. Transect 1 (T1), that closest to the V-levee canal, was less that 10 m from the edge of the canal. The canal is wider along the eastern perimeter of the survey parcel as a result of greater erosion along the canal bank. Transect 6 (T6) extended along the parcel boundary. Transects measured 290 m (951 ft) in length. Shovel tests were excavated at 10 m intervals on each of the transect lanes. Shovel tests measured 30 x 30 cm in diameter and were excavated to sterile subsoil or to a minimum depth of 30 cm. All excavated soil was screened through 1/4" mesh, and all cultural material was collected in labeled zip-lock bags. Stratigraphy within each shovel test was recorded. During transect survey, the landscape was carefully examined for natural or cultural features that might provide evidence of past activities. Shovel tests were not excavated within the area of 16JE223 until magnetometer survey was completed on the site (Chapter 9).

Initial transect start points were established along the western edge of survey parcel at N76, N86, N96, N106, N116, and N126 along the E80 of the 16JE223 site grid. At the E100 line, the transect lanes were shifted 1 m south to simplify execution of shovel tests at 5 m intervals across 16JE223. Transects 1-6 therefore were executed along the N75, N85, N95, N105, N115, and N125 grid lines through the site. Some of the T1 shovel test positions were shifted slightly northward due to proximity to the V-levee canal.

All shovel tests on T1-6 at the E80, E90, and E100 positions were negative (Figure 16). The shovel tests revealed sterile silty clay, with some admixture of humus near the surface, to a depth of 15-20 cm. Below that depth, the soil was more clayey and mottled. The silt content of the upper soil stratum increased east of the E90 line toward the center of 16JE223. The cutbank along the northern side of the V-levee canal was highest between E90 and E130, roughly the crown of the natural levee. The high canal bank in this area was inspected, but no artifacts or features were noted.

Cultural material associated with site 16JE223 was found east of the E100 line (Figure 16). The shovel tests in the site area, between E100 and E170 and from the V-levee canal to the project right-of-way at N125, are discussed in Chapter 9.

A low earth levee and adjacent drainage ditch running perpendicular to the V-levee canal were noted approximately 25 m east of the Camino site (Figure 16). These features intersect the canal between E163 and E171. The levee was composed of soil excavated from the parallel ditch along its eastern side. No borrow pits or depressions are present on the western side of the levee. The levee's height relative to the adjacent terrain along its western side varied from .75 m to 1.5 m. The levee was 4 to 5 m wide. The ditch along the levee's eastern side was about 1 m deep below the terrain east of the ditch. The ditch was 4 to 5 m wide. Representative cross-sections of the levee and ditch (Figure 17) show that the distance between the crown of levee and bottom of ditch varied from 4 to 6 m.

The terrain east of the levee and drainage ditch feature complex was uniformly lower than that to the west. The ground surface immediately west of the levee generally ranged from 1.6 to 1.8 m above sea level, rising slightly to the east (Figure 16). The lower ground east of the ditch in part reflected the gradual decline in elevation eastward of the crown of the natural

levee, but it also was the result of a road-related shallow depression which ran roughly parallel to the ditch and levee. This shallow depression appeared to correspond to the Old Barataria Road. In addition, the Old Barataria Road probably followed the approximate route of the colonial *Camino Real de Barataria* in this area. The strip of land from about E170 to E180, immediately east of the ditch and within which the road was located, was a semi-open corridor with only recent tree growth. It seems likely that the course of the Old Barataria Road was cleared to facilitate earth-moving activities associated with the construction of the parallel levee. As noted in Chapter 5, examination of aerial photographs and historic quadrangle maps indicate that the road was cleared and the levee constructed during the mid-1970s. This date is consistent with the relatively young growth observed both on the road and on the levee.

Faint road ruts parallel to the ditch were observed at N105 E174, N105 E176, N125 E176.5, and N125 E178.5. A series of low, irregular ridges and shallow depressions were noted along the eastern side of the road clearing from N85 to N135, and scattered irregular ridges were seen to the north. The ridges were elevated 15-50 cm above the surrounding terrain between E180 and E200.

The roadbed sloped down from about N90 to the northern edge of the V-levee canal at N71. This depression was 8 to 12 m wide (from E172 to E184 at canal bank). The sides of the depression were .5 to 1 m above the sloping roadbed at the edge of the canal. This deep depression probably post-dates the excavation of the V-levee canal, and it likely derives from erosion of the road into the canal.

A diffuse, extremely light surface scatter of *Rangia* shell was present along the ditch and in the fairly open strip east of the ditch to about the E180 line. In addition, isolated *Rangia* were noted on the surface to the E190 line. Small amounts of *Rangia* shell were recovered at shallow depths in shovel tests at N85 E190, N95 E180, N115 E180, and N125 E180. No artifacts or cultural deposits were found in association with this *Rangia*. A small amount of modern refuse was observed along the road ruts, but no other cultural material was recovered east of the levee and ditch.

The survey crew trenched through the earth levee at N100 (Plate 2) and, skipping the ditch, also trenched through the roadbed east of the ditch at N100 (Figures 18 and 19). The levee at N100 was about 6 m wide (E161-E167). The crown of the levee (approximately E164) was 1 m higher than the adjacent ground surface to the west. The soil composing the levee consisted almost entirely of 10YR 5/2 (grayish brown) clay with 7.5YR 4/6 (strong brown) mottling. The clay in the core of the levee was very compact, whereas that on its top and sides was stiff. A thin scatter of *Rangia* was noted on the buried ground surface underlying the levee's eastern slope (Figure 18). The *Rangia* was observed from about E164 to E167, and was partially exposed along the eastern foot of the levee. The *Rangia* was found in a matrix of 10YR 3/2-10YR 4/2 (very dark grayish brown to dark grayish brown) silty clay (Stratum VI) which extended about 1.8 m east/west and was up to .2 m thick (Figure 18). A small amount of *Rangia* extended into the top of the underlying 10YR 5/2 (grayish brown) stiff silty clay with ferrous oxide staining (Stratum V) for about 1.2 m west of the Stratum VI deposit. The *Rangia* found at the top of Stratum V probably were intrusive from the partly overlying silty clay. When the excavated ditch soil was deposited to build the earth levee, some Stratum VI material, including *Rangia*, probably was dragged westward along the ground surface.

No cultural material was recovered from Strata V or VI. A plastic shotgun cartridge wadding was found at the base of the earth levee. It probably was surface refuse from the ditch alignment, and its redeposition at the bottom of the levee illustrates the reverse stratigraphy within this feature. Plastic shotgun cartridge wadding was not introduced until 1964 (Jack Heath, Remington Arms, Inc., Company Historian, personal communication 1995). The

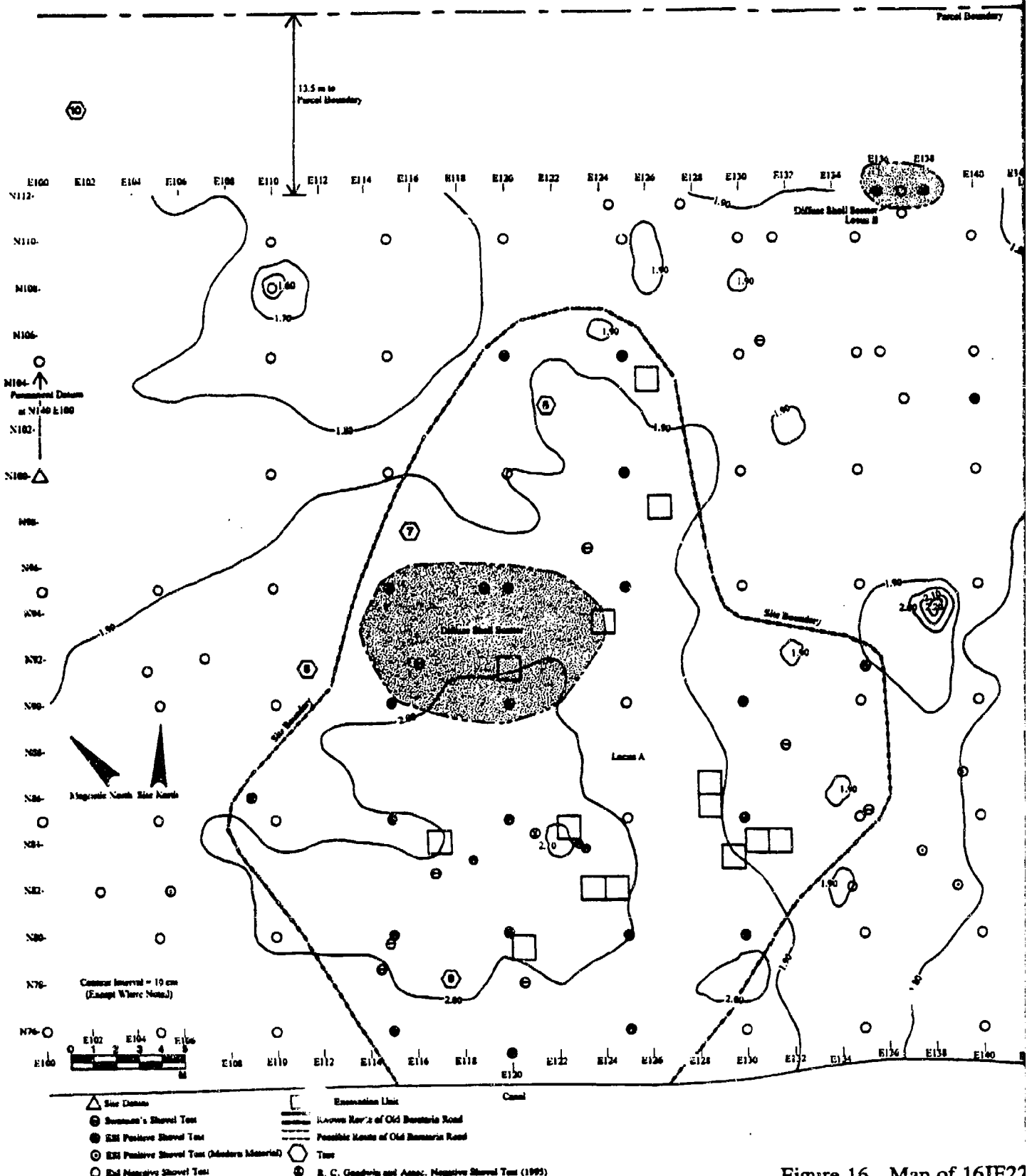


Figure 16. Map of 16JE22

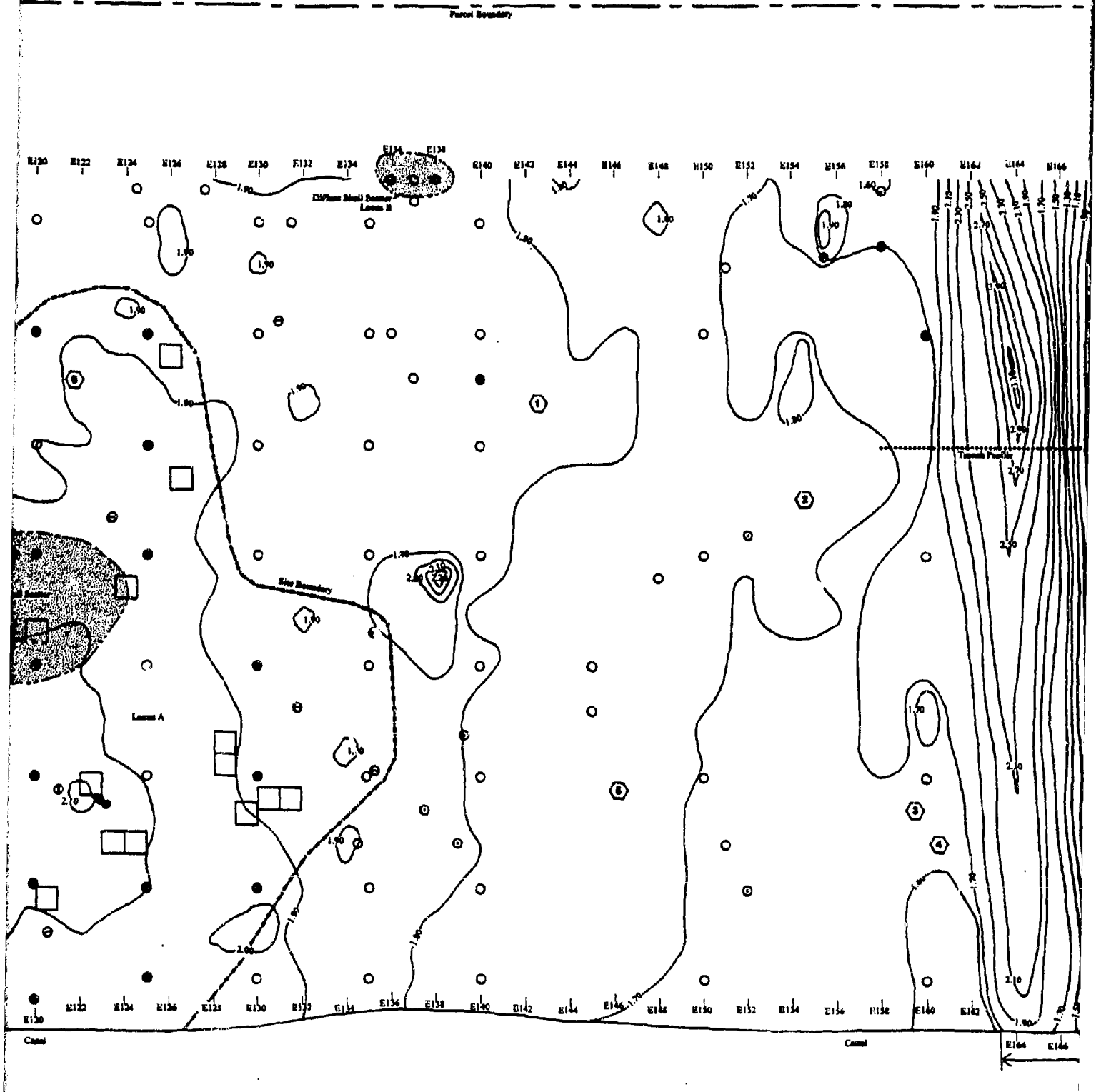
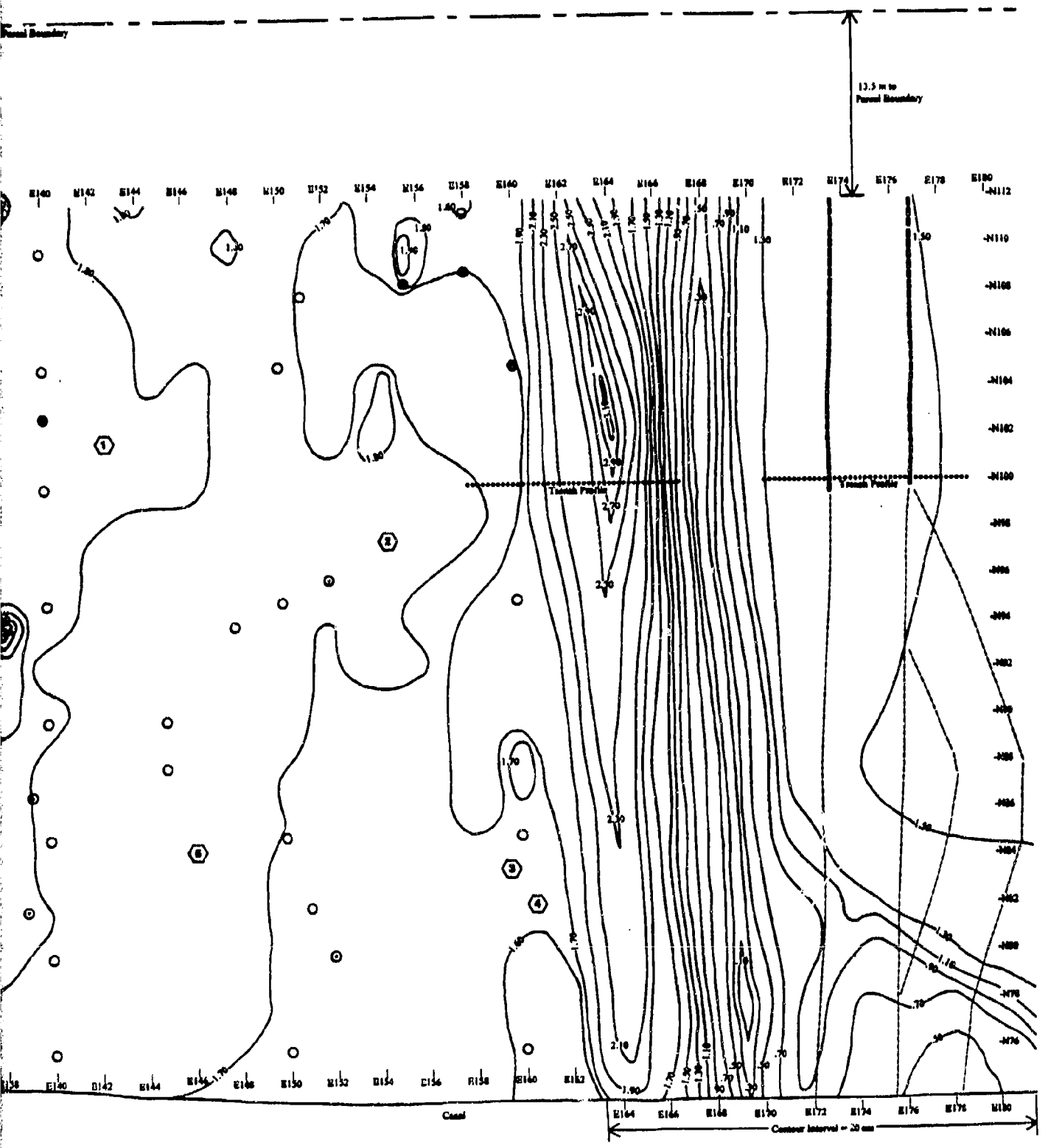


Figure 16. Map of 16JE223.


Parcel Boundary
13.5 m to
Parcel Boundary
Trench Profile
Trench Profile
Canal
Contour Interval = 20 cm

of 16JE223.

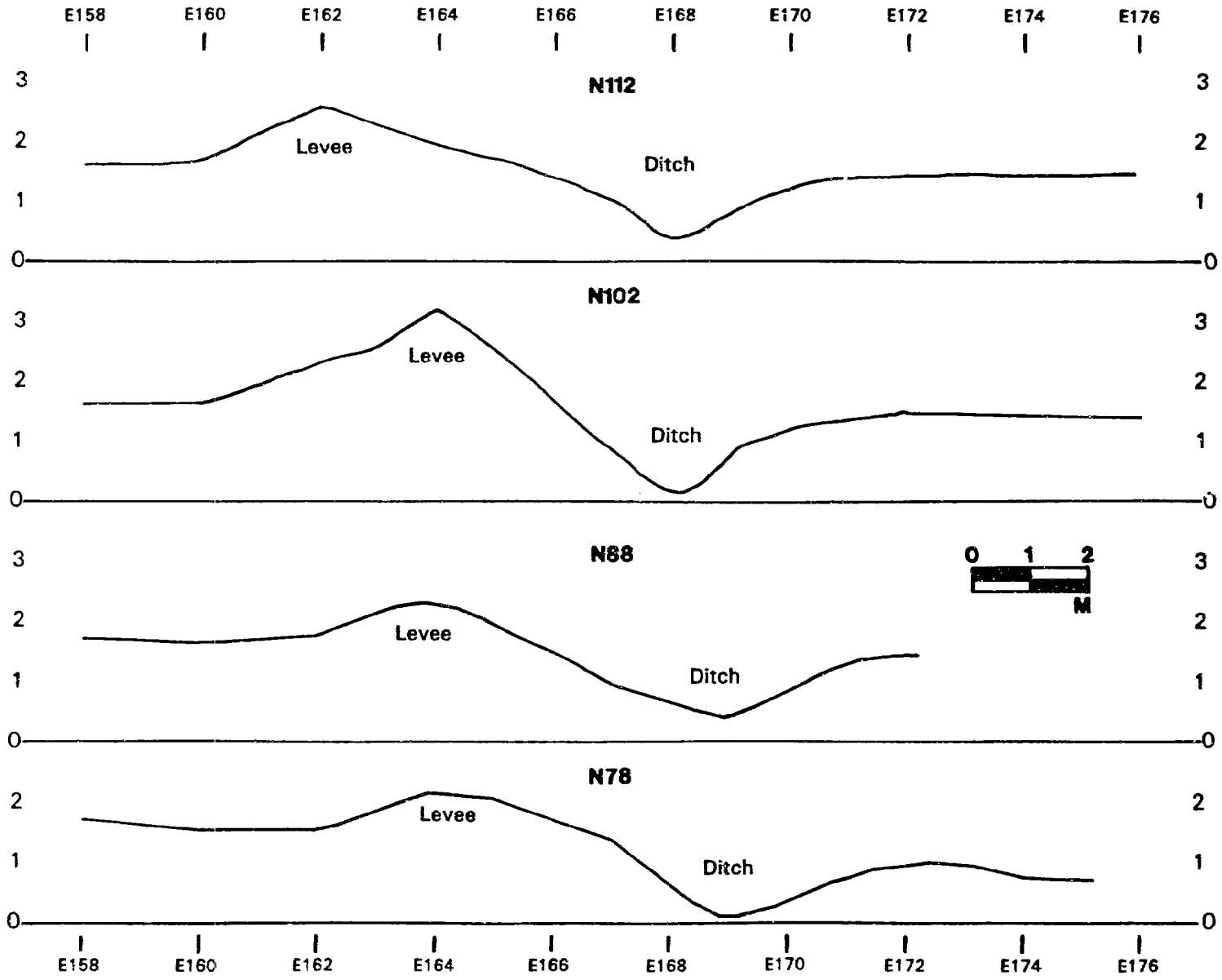
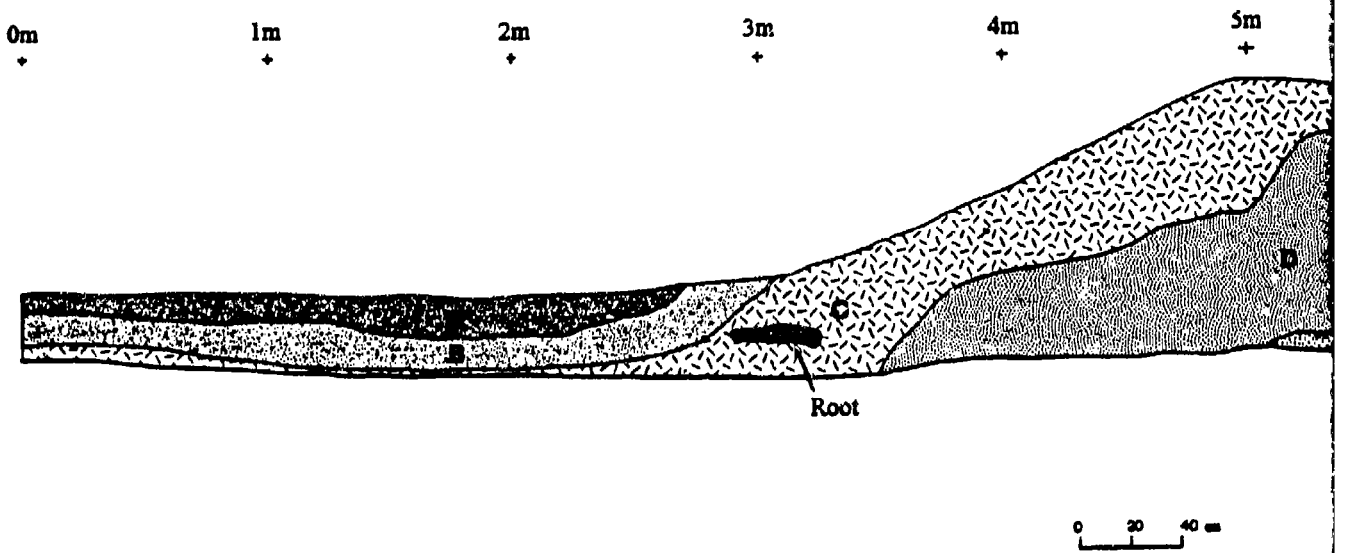


Figure 17. Profiles of the levee and adjacent ditch.

Plate 1. The Camino site prior to clearing.

Plate 2. Profiling the trench through the levee.



A 10YR 4/2 (dark grayish brown) silty clay

B 10YR 4/2-10YR 5/2 (dark grayish brown-grayish very slight 7.5YR 4/6 (strong brown) flecking

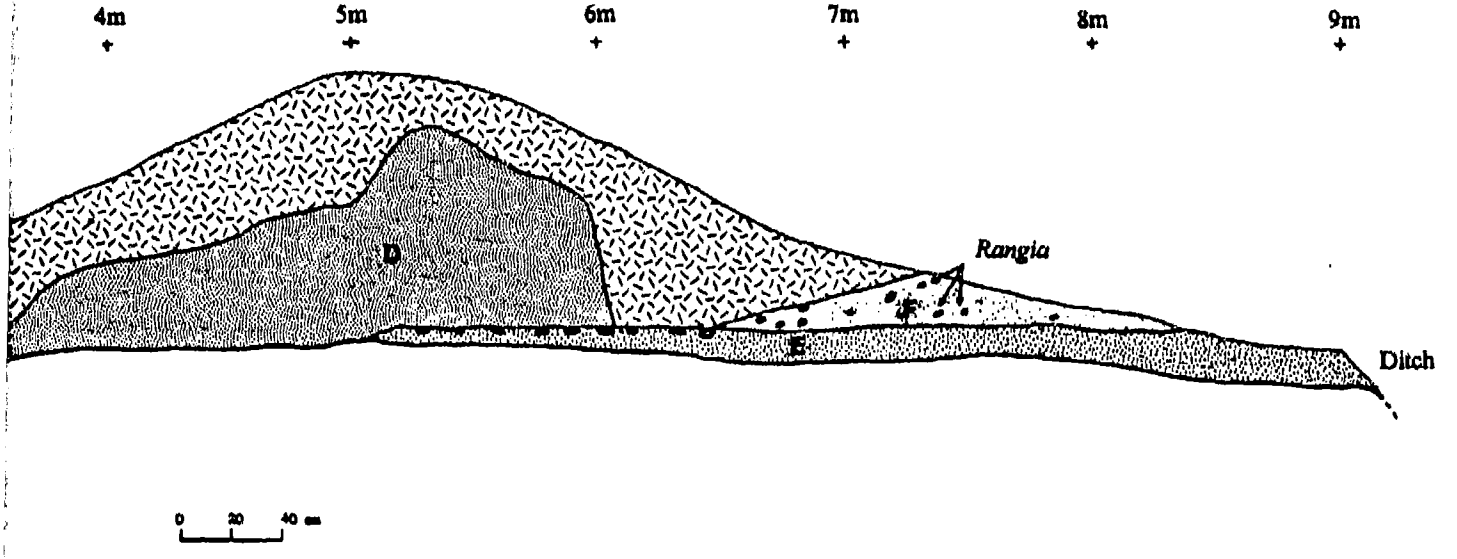
C 10YR 5/2 (grayish brown) stiff clay with lots of flecking

D 10YR 5/2 (grayish brown) very compact clay wit brown) flecking

E 10YR 5/2 (grayish brown) stiff silty clay with fe *Rangia* extends into this stratum

F 10YR 3/2-10YR 4/2 (very dark grayish brown-d a thin scatter of *Rangia*

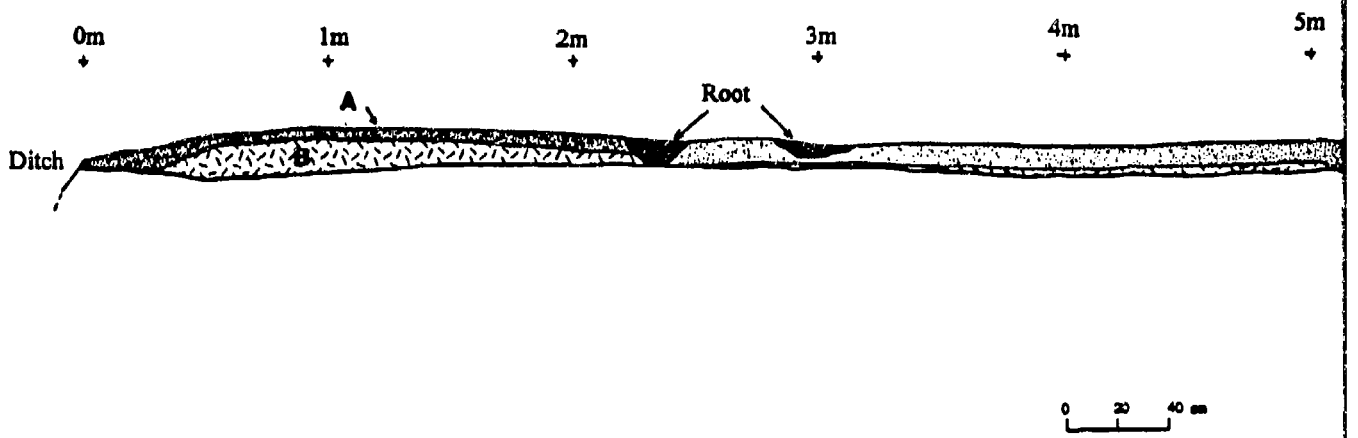
Figure 18. North profile, N100 trench



ark grayish brown) silty clay
YR 5/2 (dark grayish brown-grayish brown) slightly silty clay with
5YR 4/6 (strong brown) flecking
ayish brown) stiff clay with lots of 7.5YR 4/6 (strong brown)

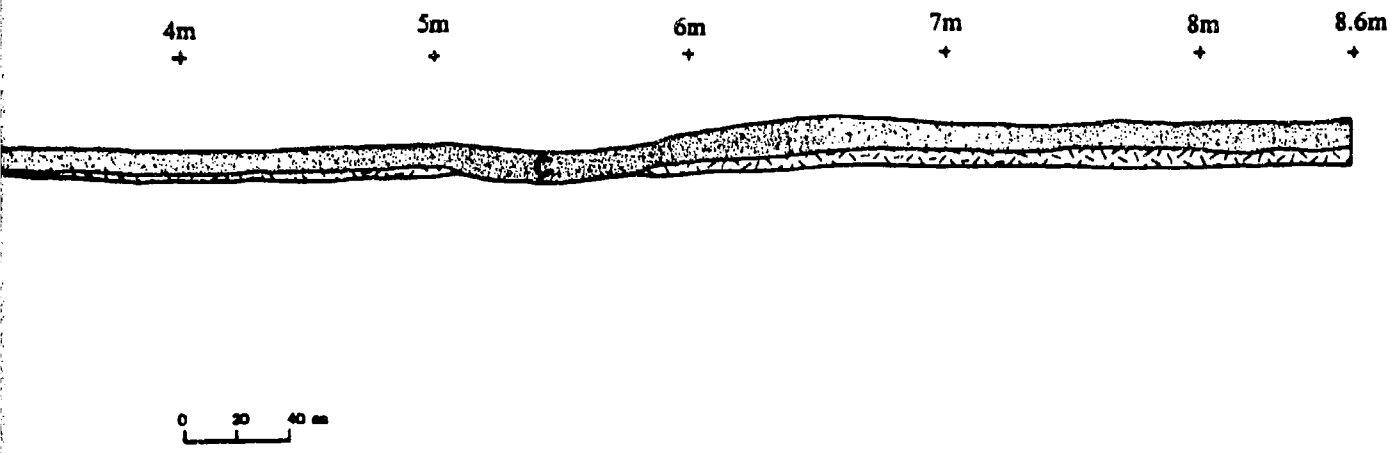
ayish brown) very compact clay with lots of 7.5YR 4/6 (strong
ing
ayish brown) stiff silty clay with ferrous oxide staining, some
ds into this stratum
YR 4/2 (very dark grayish brown-dark grayish brown) silty clay with
of *Rangia*

e 18. North profile, N100 trench bisecting levee.



A 10YR 4/2-10YR 3/3 (dark grayish brown-dark br
B 10YR 4/2-10YR 5/2 (dark grayish brown-grayish
7.5YR 4/6 (strong brown) flecking
C 10YR 4/2-10YR 5/2 (dark grayish brown-grayish
little 7.5YR 4/6 (strong brown) flecking

Figure 19. North profile, N100 trench bisecting possible



0YR 3/3 (dark grayish brown-dark brown) silty clay
0YR 5/2 (dark grayish brown-grayish brown) silty clay with lots of
(strong brown) flecking
0YR 5/2 (dark grayish brown-grayish brown) silty clay with very
4/6 (strong brown) flecking

file, N100 trench bisecting possible location of Old Barataria Road.

presence of this modern artifact near the bottom of the levee's core confirms the recent construction of the ditch and levee. No evidence of an earlier ditch or levee at this location was found.

Betsy Swanson has postulated that the *Camino Real de Barataria* and the Old Barataria Road have different alignments in this vicinity (Figure 15). Swanson's identification of the colonial *Camino* along the western side of the low earth levee is based, in part, on her interpretation that several low irregular ridges located farther west are remnants of a continuous berm formerly running along the west side of the *Camino*. A light scatter of *Rangia* was noted on the surface of these low rises, especially near N104-E108 E156, but no artifacts were recovered and no intact cultural deposits were observed at these locales (Chapter 9). The low ridges did not exhibit a uniform orientation or form a continuous alignment, although those noted west of the levee did extend very roughly parallel to the ditch and levee (Figure 16). The low ridges found up to 10 m west of the levee were composed of a small amount of *Rangia* in a silty clay matrix similar to that constituting Stratum VI in the levee.

Several shovel tests west of the overgrown road along the east side of the ditch were located on the low irregular mounds or ridges noted in that locale, but these yielded neither *Rangia* nor cultural material. A test at N125 E190, located on a north/south ridge about 15 cm above the surrounding ground surface revealed mottled silty clay soil. A test at N85 E200 on a mound about 2 m in diameter and 50 cm above the surrounding ground surface revealed humus-rich silty clay to a depth of 10 cm and mottled silty clay below 10 cm.

The presence of the Stratum VI *Rangia* concentration below the levee fill, and the presence of other small irregular ridges east of the depressed roadbed east of the ditch and levee, suggest that these small ridges occurred in a broad swath along both sides of the historic road alignment. The trench bisecting the recent course of the Barataria Road revealed a shallow depression about 4 m wide in the clay subsoil at N100 E172.5-E176.5 (Figure 19). The ground surface and underlying subsoil rose west of this depression and more slightly to the east; between E200 and E210 the ground surface began to fall to the east in a gradual slope away from the course of Bayou Des Familles. Irregular small ridges were present in the project area from about E150 to E200, or up to 25 m on either side of the roadbed. Some of these minor terrain features contain *Rangia,* and a diffuse scatter of surface *Rangia* was found in the area, but no patterned distribution was apparent. The small ridges and isolated *Rangia* concentrations probably were associated with the course of the Old Barataria Road or the nearby course of a narrow-gauge plantation railroad that operated at the turn of the century. *Rangia* may have also been scattered through the area during modern earth moving operations.

East of the earth levee and ditch, shovel tests were excavated at 10 m intervals between E180 and E290 on the N75, N85, N95, N105, N115, and N125 grid lines. The soil was predominantly a gray silty clay throughout this area. Silt content of the soil fell and the clay generally became more stiff than plastic farther east. The humus-rich topsoil decreased from an average thickness of 10 cm in the western end of the area to as little as 2 cm at E290.

Some shovel tests on T1, that closest to the V-levee canal, were shifted slightly northward to avoid the canal. Shovel test N75 E180 was in the broad depression on the road alignment sloping down into the V-levee canal to the south. The test exposed stiff mottled clay typical of the subsoil in nearby shovel tests. Shovel test N75 E190 was on the higher ground surface east of the sloping roadbed. Nutria bones were recovered in the top 5 cm. Since nutria escaped into the Louisiana marshes in 1938, these bones are necessarily modern. This test otherwise was negative. All T1 shovel tests farther east were negative. These were excavated at N77 E200, N78 E210, N79 E220, N80 E230, N80 E240, N80 E250, N80 E260, N80 E270, N80 E280, and N80 E290. Near the western end of the transect, from E260 to E290, the edge of the V-levee canal was at N77-N78.

Transect 2 followed the N85 grid line. The east bank of the modern ditch was encountered at E171. A shovel test placed at N85 E172, west of the road depression, was negative. A few *Rangia* were noted on the ground surface nearby. Silty clay was exposed to a depth of 15 cm, and mottled silty clay was noted below that depth. The shovel test at N85 E180, located in the road depression sloping down to the V-levee canal, also was negative. Very little humic material lay above mottled stiff silty clay, suggesting that the original topsoil was removed by grading or lost to erosion within the road bed. The N85 E190 shovel test east of the road depression yielded four *Rangia* shells in the top 10 cm (Table 7). A few *Rangia* also were present on the nearby ground surface. A large oak was noted near N80 E190. The N85 E200 shovel test on a low earth mound was negative. Humus-rich silty clay was present to 10 cm depth, and mottled silty clay was present below that depth. The T2 shovel tests east of N85 E200, from E210 to E290, were negative. No unusual terrain features were noted east of N85 E200.

Transect 3 followed the N95 grid line. This transect crossed the earth levee at E160-E165 and the parallel ditch at E166-E170.5. A shovel test excavated at N95 E171 contained no artifacts. The silty clay soil contained a higher silt content than did the last shovel test on the grid (N95 E160) west of the levee. The N95 E180 shovel test was in the alignment of the abandoned road bed leading south to the V-levee canal. The shallow depression sloping down to the canal began around N90. Two *Rangia* fragments were recovered in the top 10 cm at N95 E180. The test exposed silty clay soil, with a higher clay content than found at E171, and very little humic material. This may reflect the loss of topsoil within the road bed. The shovel tests at N95 E190 and N95 E200 had high organic contents in their top 10 cm. The T3 shovel tests east of N95 E180, from E190 to E290, were negative.

Transect 4 followed the N105 grid line. The eastern edge of the ditch was encountered at E170.5 on this transect. A shovel test excavated at N105 E172 contained no artifacts. The shovel test at N105 E180 was also negative. Shovel tests from E190 to E290 were all negative. A very large oak was noted at N104.5 N106.5, E279-281; one shovel test therefore was shifted from E280 to E278. A modern, meandering path used by three-wheel recreational vehicles crossed the T4 alignment near N102 E220. This path does not follow earlier roadways. No other terrain features were noted east of E180.

Transect 5 followed the N115 grid line. A negative shovel test was excavated at N115 E172, just east of the ditch. The shovel test at N115 E180, on the edge of a low bank along the eastern side of the road, yielded *Rangia* fragments to a depth of about 15 cm. *Rangia* also were present on the surface. The silty clay soil exhibited some mottling below 15 cm in this locale. Increased mottling and a higher clay content were noted below 25 cm. This shovel test provided the highest volume of *Rangia* recorded east of the Barataria Road clearing (Table 7). Its stratigraphy resembled that of Stratum VI in the N100 profile of the earth levee, suggesting that both *Rangia* concentrations were deposited near the margins of the historic roadway. A small depression, about 2 m in diameter, was noted northeast of the N115 E180 shovel test. Another small, irregular depression measuring about 2 m in diameter was observed just north of N115 E250. These did not appear to be cultural in origin. No other terrain features were noted along this transect. All shovel tests east of N115 E180, from E190 to E290, were negative.

Transect 6 followed the N125 grid line. The shovel test at N125 E180, by the eastern road rut of the overgrown Barataria Road, yielded one *Rangia* fragment in the top 10 cm. All shovel tests east of N125 E180, from E190 to E290, were negative. The shovel test at N125 E190 was located on a low north/south ridge adjacent to the old roadway. No other terrain

Table 7. Material Collected from Transect and Judgementally Placed Shovel Tests.

	N80 E152	N82 E105.5	N82 E139	N83.5 E137.5	N85 E190	N86.9 E139.3	N95 E180	N96 E152	N103 E140	N105 E160	N108.5 E155.5	N109 E158	N115 E160	N115 E180	N125 E160	N125 E180	Total
Clear (modern) glass		1															1
Bullets	1		1	1		1											4
Daub (wt. in g)									1.9								1.9
Rangia (wt. in g)					16.0		0.5			10.9	12.6	123.7	0.2	33.9	0.1	0.6	198.5
Plastic (wt. in g)		0.1						0.3									0.4

features were noted farther east. One shovel test was shifted from E270 to E268 to avoid the roots of a tree at N125 E271.

The project area was covered with dense brush and palmetto, with small to large hardwood trees. Widely scattered large oaks were noted within and north of the survey parcel, but no overall alignments or consistent orientations were observed among these trees. The area was flat terrain with only slight surface undulations. In particular, small irregular ridges, many oriented parallel to the course of Barataria Road, were present between E150 and E200. As noted above, these probably are associated with the historic roadway. The modern ditch and levee running roughly parallel to the historic road did not exhibit any clear association with these minor terrain features. Ridge and swale topography or other alluvial surface features were not identified within the survey area.

CHAPTER 9
INVESTIGATIONS AT THE CAMINO SITE

Fieldwork at 16JE223 consisted of site mapping, magnetometer survey, shovel testing, and test pit excavation. Two permanent data, one of which was located outside of the construction corridor, were established to the west and northwest of the site. These were tied to an established datum, specifically a survey point on Highway 45 designated "Point 5" by the USACE. After clearing vegetation from the site area, a 2 x 2 m grid was laid out from site datum using wooden stakes. The datum line (Y coordinate) and base line (X coordinate) stakes were spray-painted orange. The north to south line extended from N76 to N112, and the east to west line ran from a minimum of E100 to a maximum of E160. Some grid points had to be omitted because they would have been located on (or in) trees or tree roots. Elevations were taken for all grid intersections. Additional X, Y, and Z readings were obtained from points along the margins of the site, notably the edge of the V-levee drainage ditch. Also, readings were taken along four separate lines perpendicular to the levee/ditch/Old Barataria Road complex of features. The points were used to create a contour map of the site. The relationship of 16JE223 to the levee/ditch/Old Barataria Road feature complex were included on the site map (Figure 16).

Systematic surface collection was not undertaken at 16JE223. Investigations at the site by members of the Delta Chapter of the Louisiana Archaeological Society (hereafter LAS) in 1994 included raking the thick ground cover of leaves and decomposing vegetation, and consequently, the surface artifacts were displaced. In addition, surface collection(s) were made during the LAS investigations. Thus, the surface distribution of artifacts was not considered reliable for the purpose of exploring activity patterning at the site. Surface artifacts noted during the current project were assigned general proveniences (e.g. Locus A, Locus B), collected, and included in the artifact analyses.

Magnetometer Survey

Magnetometer survey was initiated concurrent with site clearing and mapping. The survey was executed over a two day period, during which time the weather was influenced by a passing front. On the second day, there was a little rain in association with a thunderstorm. A Geometric proton precession magnetometer was used to perform the survey. Transect lines were run at 2 m intervals. When trees were present along the projected transect line, 2.5 m spacing was utilized. Survey locations along the transect lines were controlled by using a 100 m tape between the established points on the site grid. Flagged lead weights were placed at one meter intervals and recovered after each transect was surveyed by the magnetometer. Readings were taken at 1 m intervals along each line. The entire area between E100-E160 and N76-N112 was surveyed in order to determine if there was a difference between on-site and off-site readings.

Artifacts which could have been detected include individual ferrous objects and fired brick. Archeomagnetic features at this site could include historic or prehistoric baked clay, burnt wall structures, fire hearths or the accumulative effect of single artifacts in close physical association. Geomagnetic features at this site could include cultural or natural trenches, erosional areas within a clay surface or the carbonization of plant materials by fire or rot. Readings were taken at two different sensor heights. The 1.8 m height proved to be more erratic, yielding a +/- 3 gamma variation, than the 1 m height, which showed only a +/- 1 gamma variation. Therefore, only the readings taken 1 m off the ground surface were analyzed, contoured, and used in this assessment. Tie lines were made at right angles to the primary survey lines to adjust values of each line effected by diurnal variation. Diurnal variations are changes in the earth's magnetic field which occur throughout the day. Such changes can also be induced by electrical storms. At the Camino site, diurnal fluctuations were as high as 26

gamma s on some lines while others showed little or no change. The total ambient magnetic field at the site (after correction for diurnal variation) is between 49718 and 49734 gammas, representing a total range of 16 gammas over the study area. After field recordation, the magnetic values were plotted and diurnal corrections were made prior to preparation of a magnetic contour map.

The magnetic contour map was executed on a one gamma contour interval (Figure 20). Much of the magnetic variation appears to reflect minor variations in surface topography. The most prominent magnetic area, with an approximately 4 m radius in the vicinity of N91 E137, corresponds to the root system of a rotting or burnt tree. The carbonization of this material probably affected much of the magnetic inflection in this area, as well as the small inflection to the east of the root system centered at N89-90 E144-146. The locations of anomalies within the site area were inspected using 1 x 1 m units, while those anomalies located outside of the site area that could not be attributed to natural features were flagged for subsequent metal detector inspection and shovel testing (see below). The areas examined were selected for their position within the separate magnetic fields which represented magnetic foci. These magnetic foci best represent where the source of the magnetic variation occurs.

Comparison of the locations of shovel tests excavated prior to the current investigation (Figure 16) to the magnetic anomalies found on the site (Figure 20) demonstrate that the former have affected the magnetic foci at the site. Only three of the 13 shovel tests lie within one meter of recorded magnetic foci. Since these shovel tests were placed at the locations of positive metal detector readings, ferrous material was removed from these tests, and consequently, the magnetic data were lost. In addition, taking this ferrous material out of its context would mask other associated cultural material (e.g., ceramics, lithics, non-ferrous metals, non-burned organic material) from the magnetic record.

Shovel Testing and Probing

Following completion of the magnetometer survey, the area between E100-E160 and N76-N112 was shovel tested at gridded 10 m intervals utilizing previously-established survey transects (see Chapter 8). Shovel tests measured 30 x 30 cm in diameter and were excavated to sterile subsoil or to a minimum depth of 30 cm. All excavated soil was screened through 1/4" mesh, and all cultural material was collected in labeled zip-lock bags. The site area as defined by positive shovel tests was then tested at 5 m gridded intervals. Shovel testing was terminated along each line following the excavation of at least two consecutive sterile shovel tests (Figure 16). All 5 m interval tests were excavated to sterile subsoil, and all soils were screened through 1/4" mesh. The location of each shovel test is depicted on Figure 16.

Artifacts recovered from the surface and from shovel testing are presented in Table 8. Included are artifacts recovered from a shovel test excavated by employees of R. Christopher Goodwin and Associates, Inc., during a site visit with USACE personnel prior to data recovery operations. As shown on Figure 16, positive shovel tests extended primarily from N75 to N105 and from E109 to E130. This area was designated Locus A. Artifacts recovered during shovel testing from Locus A included creamwares and pearlwares as well as a few coarse earthenware sherds, bottle glass, kaolin pipe fragments, a gunflint, nails, amorphous metal, bone, daub, brick, and *Rangia*. In addition, 10 aboriginal sherds and "sherdlets" were collected. These were primarily collected south of the N80 line between E120 and E130, and from the vicinity of a surface *Rangia* scatter located between N90-95 and E114-124.

Shovel tests excavated by the Delta Chapter of the Louisiana Archaeological Society in 1994 also yielded relatively little cultural material (Table 9). It should be noted, however, that these shovel tests all were excavated at locations of positive metal detector readings. Conse-

Table 8. Artifacts from Shovel Tests and Surface Collections, Camino Site.

	N75 E120	N76 E115	N76 E125	N80 E115	N80 E120	N82 E105.5	N80 E130	N85 E115	N85 E120	N85 E130	N86 E109	N90 E115	N90 E120	N90 E130	N95 E115	N95 E120	N95 E125
Creamware	1									5							
Pearlware											1		1				1
Green shell-edged pearlware										1							
Annular pearlware																	
Whiteware												1					
Flecked Lead-Glazed Redware							1										
Brown-Glazed Redware										1							
Spanish Olive Jar										1							
Clear glass																	
Light green glass																	
Olive bottle neck, laid on string			1														
Pipestem									1								
Pipebowl								1									
Gunflint (black)				1													
Tertiary flake										1							
Unidentified nail										2							
Unidentified metal														1			
Unidentified metal (wt. in g)														0.1			
Aboriginal ceramics		1			3		1		1							1	
Sherdlets					1		1								1		
Bone (count)						2			5				1				
Bone (wt. in g)						0.1			1.6				0.4				
Daub (wt. in g)				6.8	3.8				9.6	2.4			0.6			2.4	
Brick (wt. in g)										31.6							
Rangia (wt. in g)													18.4				
Total	1	1	1	1	4	2	3	1	7	11	1	1	2	1	1	1	1

Table 8. Artifacts from Shovel Tests and Surface Collections, Camino Site.

	N100 E125	N105 E120	N105 E125	N112 E136	N112 E137	N112 E138	RCG&A Shovel Test	Surface Locus B	Surface E of N86 E108	Surface Locus A Center	Total
Creamware							1			1	8
Pearlware									3		6
Green shell-edged pearlware											1
Annular pearlware			1								1
Whiteware											1
Flecked Lead-Glazed Redware											1
Brown-Glazed Redware											1
Spanish Olive Jar											1
Clear glass							1				1
Light green glass		2									2
Olive bottle neck, laid on string											1
Pipestem							1				2
Pipebowl											1
Gunflint (black)											1
Tertiary flake											1
Unidentified nail											2
Unidentified metal			5								6
Unidentified metal (wt. in g)			109.5								109.6
Aboriginal ceramics						2		3			12
Sherdlets				2							5
Bone (count)											8
Bone (wt. in g)											2.1
Daub (wt. in g)											25.6
Brick (wt. in g)	1290.0						6.1				1327.7
Rangia (wt. in g)					6.7	394.5					419.6
Total		2	6	2		2	3	3	3	1	62

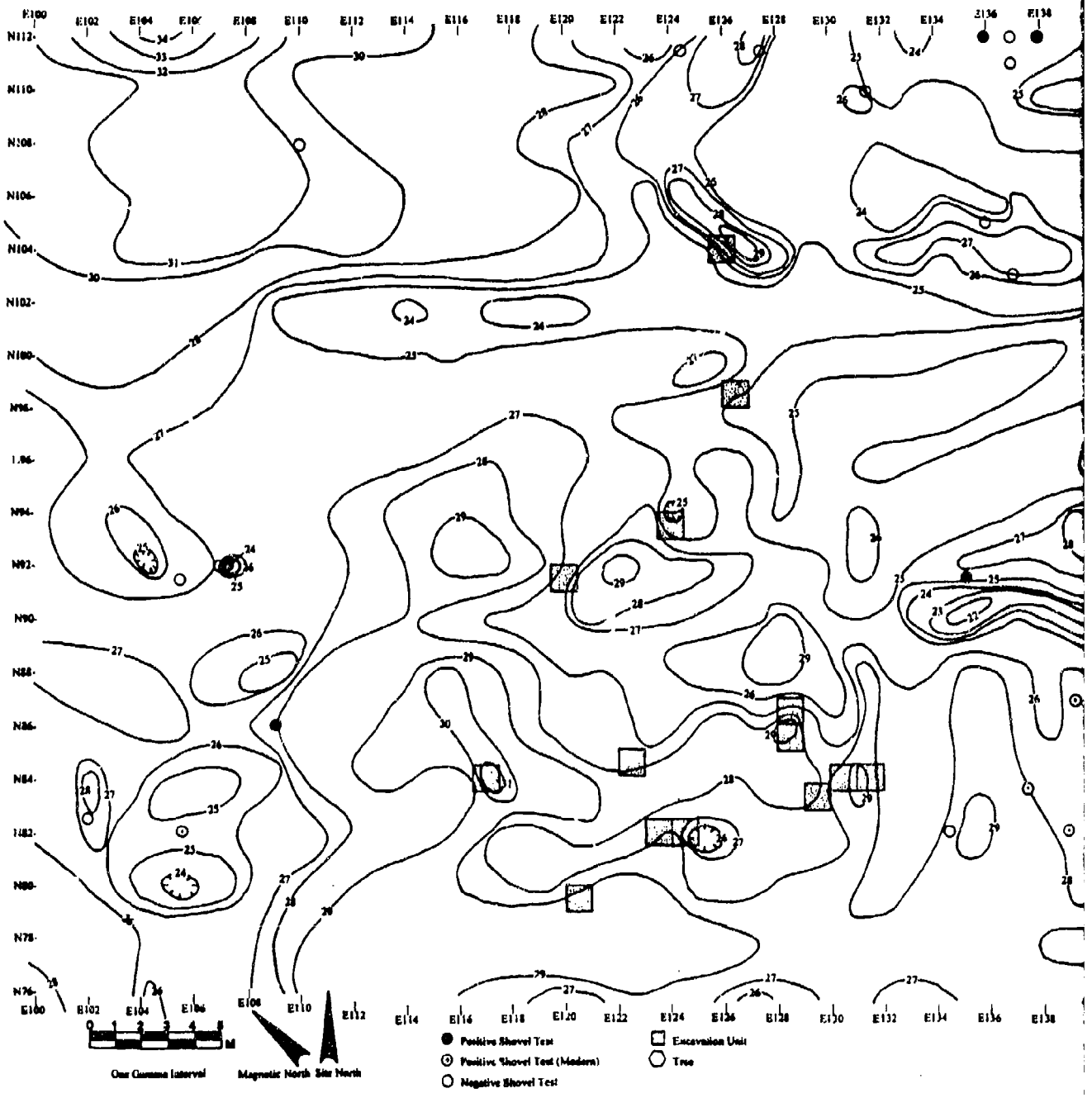


Figure 20. Magnetometer map of 16JE223.

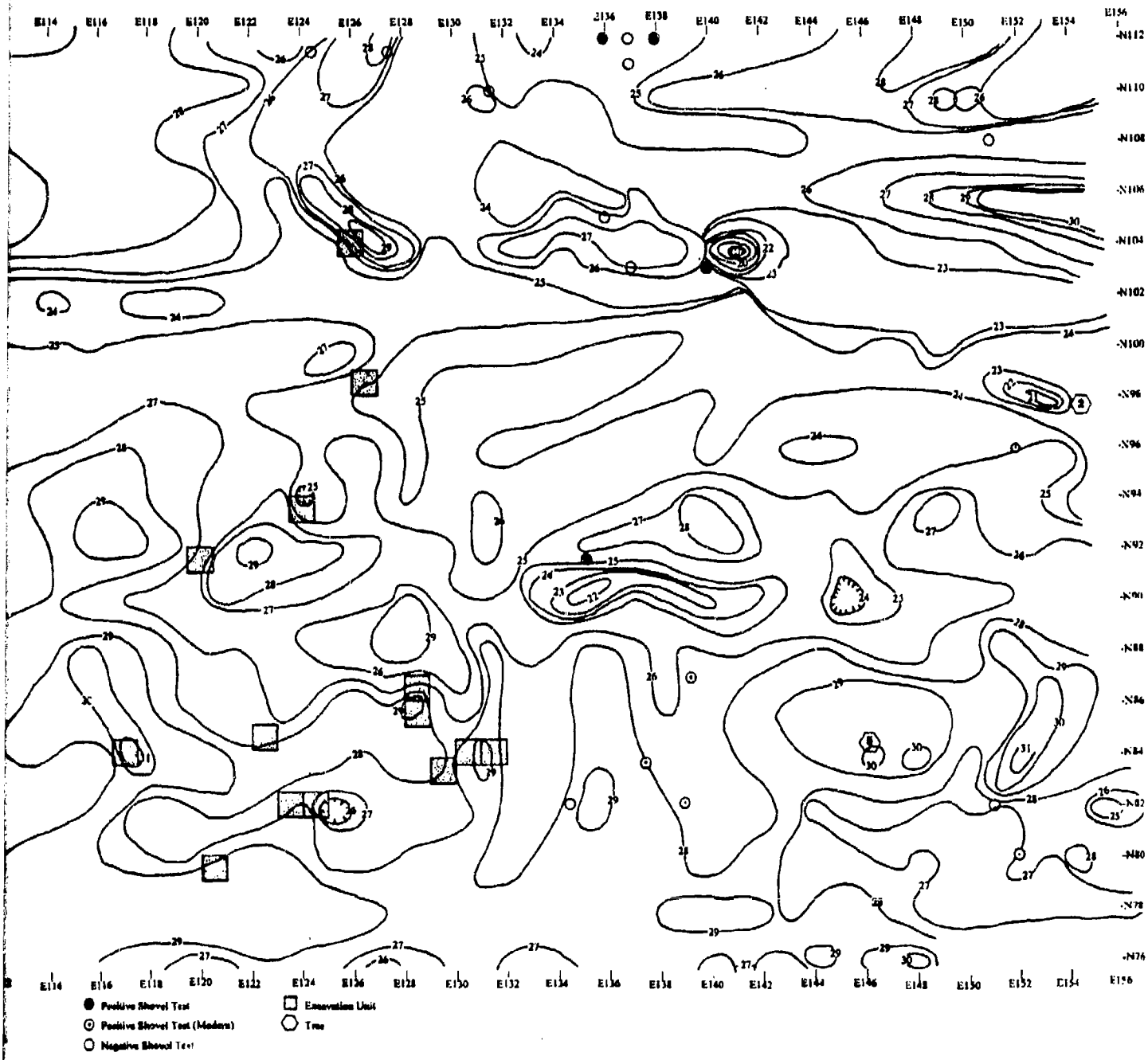


Figure 20. Magnetometer map of 16JE223.

Table 9. Artifacts from LAS Shovel Tests and Surface Collection, Camino Site.

	ST 1	ST 2	ST 3	ST 4	ST 5	ST 6	ST 7	ST 8	ST 9	ST 10	ST 11	ST 12	ST 13	Surface	Total
Key												1			1
Spade	1														1
Strap iron				3						1				1	5
Pewter fragments (wt in g)										16.5					16.5
Unidentified metal	3	1		1		2			4						11
Unidentified metal (wt. in g)	4.2	2.3		0.1		21			2.9						30.2
Aboriginal ceramics				1										5	6
Sherdlets				1											1
Bullet							1				1				2
Bullet cartridge			1												1
Bone (count)			23	19	17					36	4			1	100
Bone (wt. in g)			4.97	1.26	2.24					8.91	0.97			0.60	18.95
Daub (wt. in g)		3.6	59.2						3.5	249.0				25.8	341.1
Brick (wt. in g)					27.5				0.6					66.6	95.0
Rangia (wt. in g)											326.7				326.7
Unidentified shell (wt. in g)											0.4				0.4
Total	4	2	35	26	18	4	2	1	9	63	6	2	1	64	237

Table 9. Artifacts from LAS Shovel Tests and Surface Collection, Camino Site.

	ST 1	ST 2	ST 3	ST 4	ST 5	ST 6	ST 7	ST 8	ST 9	ST 10	ST 11	ST 12	ST 13	Surface	Total
Creamware			3				1		1	1				36	42
Annular creamware										2					2
Pearlware										2				5	7
Green shell-edged pearlware														3	3
Annular pearlware														1	1
Blue hand-painted pearlware														1	1
Polychrome hand-painted pearlware														1	1
Marine ware						1								1	2
Unglazed redware														1	1
Eroded redware				1											1
Clear glass														1	1
Olive glass										2				1	3
Lead fragment											1				1
Red glass bead														1	1
Spike								1					1		2
Wrought nail			2		1				1	5				1	10
Wrought nail fragment			1			1				6				3	11
Cut nail fragment														1	1
Unidentified nail		1	5						3	8		1			18

quently, the LAS tests were somewhat richer in terms of artifact yield, at least in terms of metal items.

As shown in Figure 16, the LAS tests, with one exception, were within Locus A as defined by the ESI shovel tests. The exception, LAS Shovel Test 13, was located approximately at N105.5 E130.5 and contained a single nail (Table 9). Because of the paucity of material in this northernmost portion of the site (Excavation Unit N104.5 E126.5 was completely sterile), the boundaries of Locus A were not extended to include this isolated artifact.

Two minor concentrations of artifacts were noted in Locus A as a result of both the ESI and LAS shovel tests, and neither of these were associated with midden deposits. The ESI shovel test at N85 E130 yielded more material than any other, and LAS excavated two rich tests in the vicinity of N83 E123. However, the shovel test at N85 E125, which was located between the strongest positive tests on the site, was negative. This demonstrates the extremely uneven distribution of artifacts at 16JE223.

Gridded-interval shovel tests did not yield artifacts or shell within or adjacent to a small, extremely diffuse *Rangia* scatter located to the northeast of Locus A (Figure 16). This area was designated Locus B. Three aboriginal pottery sherds were found on the surface at this locale. Shovel testing and probing with a soil corer were utilized to define the subsurface extent of Locus B. A *Rangia* lens was present only in tests a N112 E138 and N113 E138. In addition, two tiny aboriginal sherds were recovered from a shovel test at N112 E136. No Euro-American material was found at this locus.

Three shovel tests were also excavated within a diffuse *Rangia* scatter located on a slight elevation immediately to the west of the levee/ditch/old Barataria Road complex. Two of these three tests (N108.5 E155.5 and N109 E158) were weakly positive for shell, while the test at N111.5 E58 was negative (Figure 16, Table 7). No cultural material was recovered, and no lens or midden was noted in these tests. This seems to confirm that this shell is related to the construction of the levee. As noted in Chapter 8, shell also was recovered in transect shovel tests at N105 E160 and N115 E160.

A very slight depression was located to the northeast of Locus A, at approximately N108 E110 (Figure 16). It was thought that this was possibly a pit feature such as those seen at other *Isleño* sites (Chapter 7). To test this hypothesis, a shovel test was excavated in the center of the depression. Water table was encountered at 10 cm below surface, and no artifacts were recovered. Thus, there is no evidence that the depression is cultural in origin; it may be the result of a tree fall.

Shovel tests were excavated at 21 selected locations of magnetic anomalies outside of the site area (Figure 20). As noted above, some of these anomalies were attributable to trees or to decomposing root systems. The remaining 21 were checked with a metal detector, and a screened shovel test was excavated at each regardless of whether or not they yielded positive metal detector readings. However, when a positive metal detector reading was recorded, the shovel test was excavated at the exact location of the reading. Stratigraphy was recorded within each of these 21 tests. In addition, any positive metal detector readings noted while walking between magnetometer anomalies was also shovel tested.

The result of this effort was the recovery of several bullets (the area had been extensively utilized for hunting) as well as other modern material (Figure 16, Table 7). One test at N103 E140 was very weakly positive; it contained a tiny daub fragment (Table 7). Given the number of intervening negative tests between this test and the positive tests within Locus A, the extension of the locus boundaries did not seem reasonable. Similarly, creation of a separate locus for a single daub fragment did not seem realistic.

Finally, probing with a soil corer was utilized to define the limits of the subsurface *Rangia* midden within Locus A (Figure 21). This small, subsurface midden appears to have an elongated protrusion extending to the west. Similar, finger-like shell deposits were also noted at the nearby Bayou Des Familles site (Kidder 1995:Figure 11).

Excavation Units

The results of shovel testing and magnetometer survey were utilized to plan the placement of 14 1 x 1 m excavation units (Figure 16, Plate 3). The project Remote Sensing Specialist, Mr. Allen Saltus, marked those anomalies requiring further investigation. Three of these units (N84.5 E131, N84.5 E132, and N87 E129)[1] were placed to intersect magnetometer anomalies in the vicinity of artifact concentrations identified during shovel testing. Six of the units (N84.5 E117.5, N92 E120.5, N94 E124.5, N82.5 E125, N99 E125, N104.5 E126.5) were placed on the location of the remainder of the magnetometer anomalies within Locus A. Two of the units (N82.5 E124, N83.8 E130) were placed to further examine features contained within other units. Two units were placed adjacent to relatively rich shovel tests excavated by LAS (N85.1 E123) and by ESI (N86 E126). Finally, one unit (N80 E121) was judgmentally placed adjacent to a shovel test that yielded two aboriginal sherds. The 14 excavation units along with the shovel tests excavated within the site area (including the 13 shovel tests excavated by LAS) represent a minimum of a 2.9% sample of the site.[2]

The selected units were marked off, and the elevation of all four corners and the unit center was recorded. The unit data were generally set in the northeast corners of the units at 0 to 5 cm above ground surface; exceptions included contiguous units, which shared data. The units were excavated by natural strata to sterile subsoil, and each stratum was divided into levels not exceeding 5 cm in thickness. Once culturally sterile subsoil was encountered, a minimum of one 10 cm level was excavated without screening. This provided a clear representation of the overlying stratigraphy. An auger test to 1 m depth was then excavated in the center of each unit to insure that no deeply buried cultural deposits were present.

Plan drawings were made of the top of each level, and a plan drawing of the final floor was prepared in each 1 x 1 m unit. Similarly, the bottom of each level was photographed. Two profiles were drawn and photographed in each excavation unit to demonstrate stratigraphy. All features encountered in the 1 x 1 m units were planned and photographed, and feature fill was excavated separately.

Ten liter flotation samples of soil matrix were collected from each 5 cm level within each culturally positive natural stratum (excluding topsoil) in all of the 1 x 1 m units. These samples were defloculated with baking soda and initially floated at the site. One hundred percent of feature fill was floated. This included several natural features (i.e., tree roots) that were assigned feature numbers prior to determining that they were not cultural in origin. The flotation system utilized had the basic features of a SMAP machine (Watson 1976). A 0.5 mm geological sieve caught the light fraction, and the heavy fraction rests on 1.6 mm window screen that replaces the bottom of a metal washtub (Kidder and Fritz 1993). The collected materials were refloated a second time in the laboratory using the sugar reflotation method (Kidder n.d.) to improve recovery. All materials recovered during flotation were saved and provided the samples for faunal and floral analyses.

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[1] all units were designated with their northeast corner grid coordinates.

[2] The estimate of 600 sq m for site size may be somewhat generous. Although positive shovel tests were recovered beyond Excavation Unit N104.5 E126.5, this unit was completely sterile and lacked the culture-bearing stratum noted in the other units.

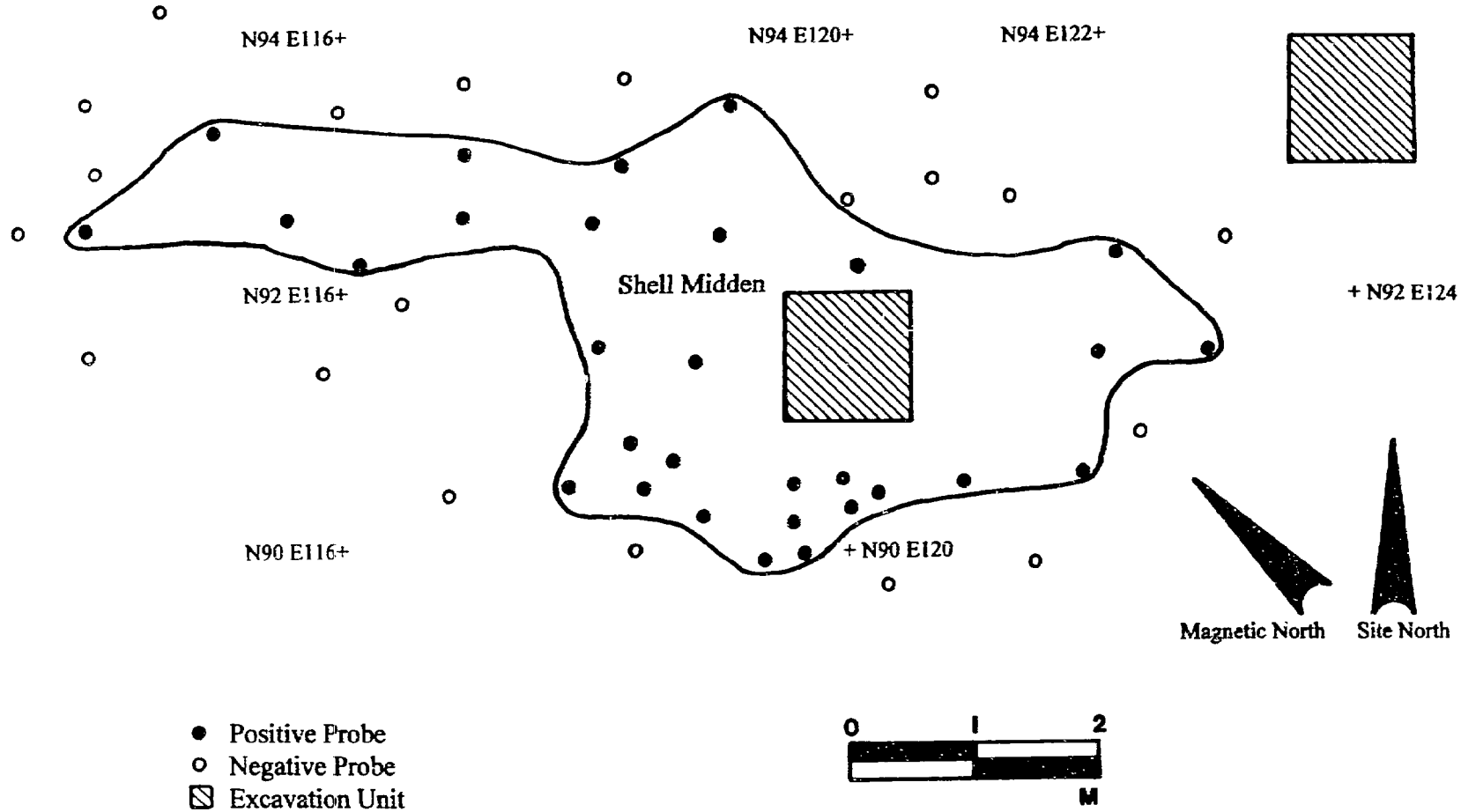


Figure 21. Extent of shell midden within Locus A, as determined by probing.

Plate 3. Excavations at the Camino site.

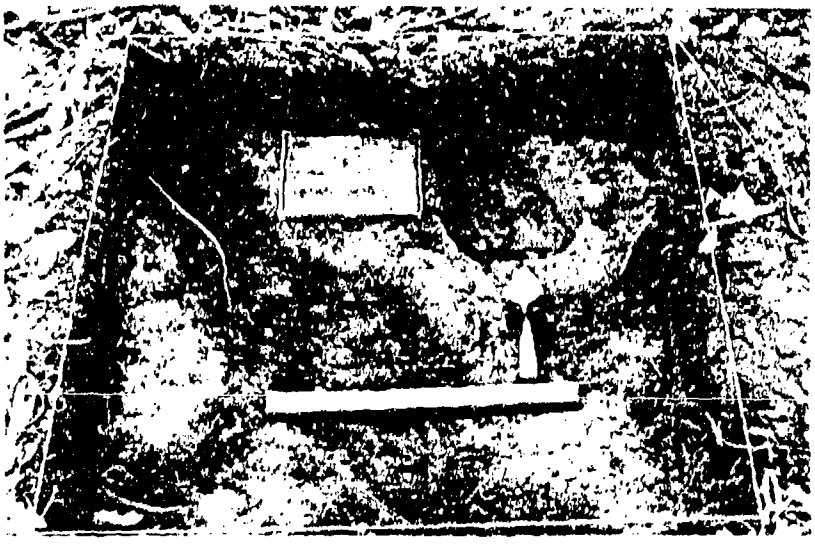


Plate 4. EU N82.5 E125 showing Feature 2.

All other excavated soil from the units was water screened though 1/4 inch mesh. Water for screening was pumped from the V-levee drainage ditch. Recovered material was placed in labeled zip-lock bags.

Three distinct strata were noted in most units at the site, and these were consistent in soil color and texture. Stratum A was a 10YR 3/2 (very dark grayish brown) silty clay loam topsoil that generally extended 5 to 10 cm below surface. Root disturbance was generally extensive in this level. Artifacts were recovered from within Stratum A, but Stratum B was the primary culture-bearing level. Stratum B consisted of a 10YR 4/2 (dark grayish brown) silty clay. It usually extended to about 20 cm below surface, but it continued to greater depths within features. Stratum C was a 10YR 5/2 to 10YR 5/3 (brown) silty clay sterile subsoil. Additionally, the subsurface shell midden in Locus A was designated Stratum D. It consisted of *Rangia* within the Stratum B 10YR 4/2 (very dark brown) silty clay matrix.

A detailed description of excavations within each of the units follows. Levels are designated by both strata letters and level numbers. Thus, "Level A-1" means Stratum A, Level 1, etc. Soil colors and textures for the strata are the same as those described above, unless otherwise noted. The units are presented from south to north and east to west with the exception of contiguous units, which are presented in the order in which they were excavated.

N80 E121. This unit was located in the south central portion of Locus A (Figure 16). The unit was judgmentally placed next to a shovel test that yielded two aboriginal sherds and was intended to explore the possibility that there was a concentration of aboriginal activity in this area. Artifacts recovered from the unit are summarized in Table 10.

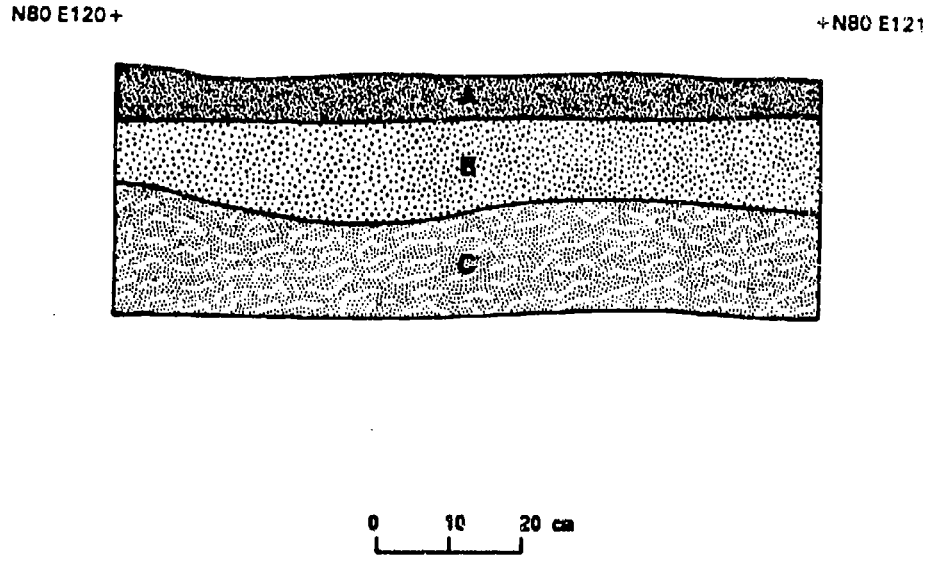
Stratum A, which extended to 5 cm below surface (5-10 cmbd), yielded a creamware sherd, a fragment of olive-green glass, and a small amount of daub. Level B-1 (10-15 cmbd) contained two historic sherds, an aboriginal sherd, a rose-headed nail, two pieces of lead shot, bone, and daub. Level B-2 (15-20 cmbd) yielded a similar range of historic artifacts in larger numbers (n=20) and included a sherd of Decorated Marine Ware. This presumably Spanish type is rarely encountered on eighteenth-century sites in southeastern Louisiana (Yakubik 1990:291-292). The collection from Level B2 also included 34 aboriginal sherds. Decorated types included Anna Incised, *var. unspecified*, and Buras Incised, *var. unspecified*. Level B-3 (20-23 cmbd) contained no historic material, but 16 aboriginal sherds and sherdlets were collected. Sterile soil was encountered at 18 cm below surface (Figure 22).

The unit yielded almost twice the number of aboriginal sherds found in EU N94 E124.5, which was located on the edge of the *Rangia* midden, and three times as many as found in EU N92 E120.5, which was located within the midden. This seems to confirm that the southern portion of Locus A was a focus for aboriginal activity. The unit also demonstrated that European and aboriginal materials were thoroughly mixed.

N82.5 E125. This unit was located in the south central portion of Locus A at the location of a magnetometer anomaly (Figures 16 and 20). Stratum A extended to 5 cm below surface (5-10 cmbd), and it contained two aboriginal sherds, olive-green bottle glass, and a pewter button fragment (Table 11). A large animal burrow cut through the northwest corner of the unit in this stratum. Level B-1 (10-15 cmbd) contained bone, four pieces of lead shot, two creamware sherds and four aboriginal sherds and sherdlets. Historic artifacts diminished in Level B2 (15-20 cmbd), but 14 aboriginal sherds and sherdlets were collected. At the base of Stratum B (16 cm below surface, 21 cmbd) animal burrows running northwest-southeast and northeast-southwest were defined (Figures 23 and 24). These were apparently recent, since they were filled with Stratum A topsoil (10YR 3/2 [very dark gray brown] silty clay loam). In addition, a small pit, designated Feature 2, was observed in the northeast corner of the unit (Figure 24, Plate 4). Feature 2 was excavated separately, and its contents were floated. It

Table 10. Artifacts from N80 E121.

	A1	B1	B2	B3	Total
Creamware	1	1	3		5
Manganese-Glazed Redware		1	3		4
Decorated Marine Ware			1		1
Olive glass	1		1		2
Primary flake		1			1
Rose-headed wrought nail		1			1
Wrought nail frag.			1		1
Lead shot		2			2
Unidentified metal			4		4
Unidentified metal (wt. in g)			0.2		0.2
Aboriginal ceramics		1	34	9	44
Sherdlets				7	7
Bone (count)		3	7		10
Bone (wt. in g)		0.05	1.99		2.04
Charcoal (wt. in g)		0.5	0.1	0.7	1.3
Daub (wt. in g)	6.6	58.6	47.6	4.5	117.3
Brick (wt. in g)			4.7		4.7
Total	2	10	54	16	82

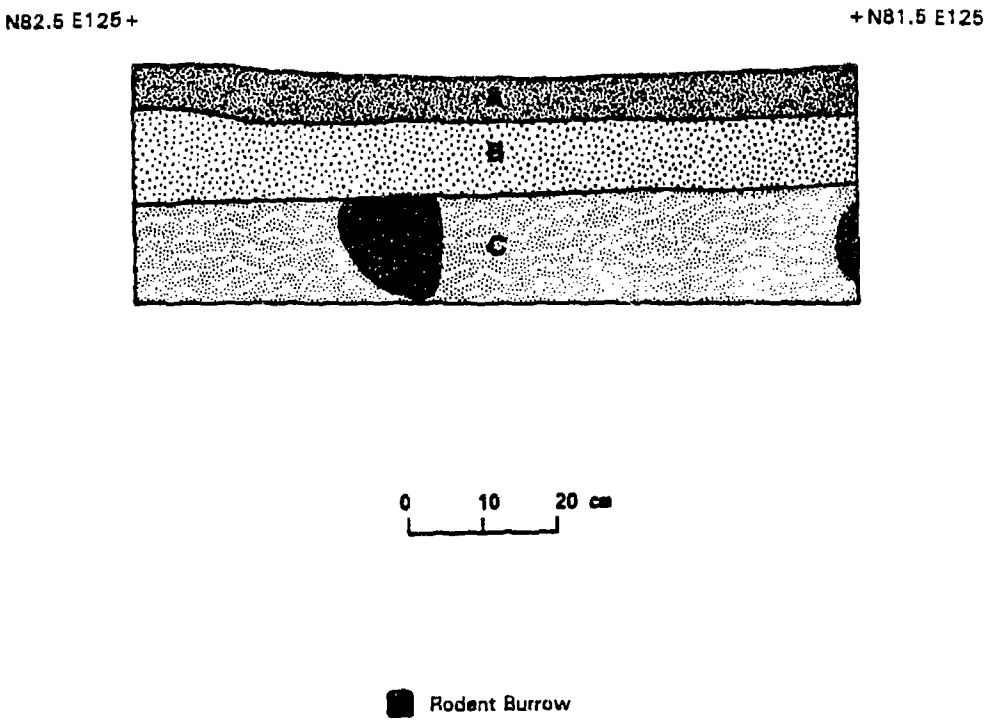


A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 22. North profile, EU N80 E121.

Table 11. Artifacts from N82.5 E125.

	A1	B1	B2	Fea. 2	Total
Creamware		2	1		3
Olive glass	1			1	2
Copper alloy button frag.	1				1
Tertiary flake (honey-colored)				1	1
Wrought nail frag.			1		1
Unidentified nail				1	1
Lead shot		4		5	9
Unidentified metal			1		1
Unidentified metal (wt. in g)			0.4		0.4
Aboriginal ceramics	2	3	7	2	14
Sherdlets		1	7		8
Bone (count)		9			9
Bone (wt. in g)		0.12			0.12
Charcoal (wt. in g)				3.9	3.9
Daub (wt. in g)		7.5	6.1		13.6
Fired clay (wt. in g)	0.01				0.01
Rangia (wt. in g)		0.1			0.1
Total	4	19	17	10	50



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 23. East profile, EU N82.5 E125.

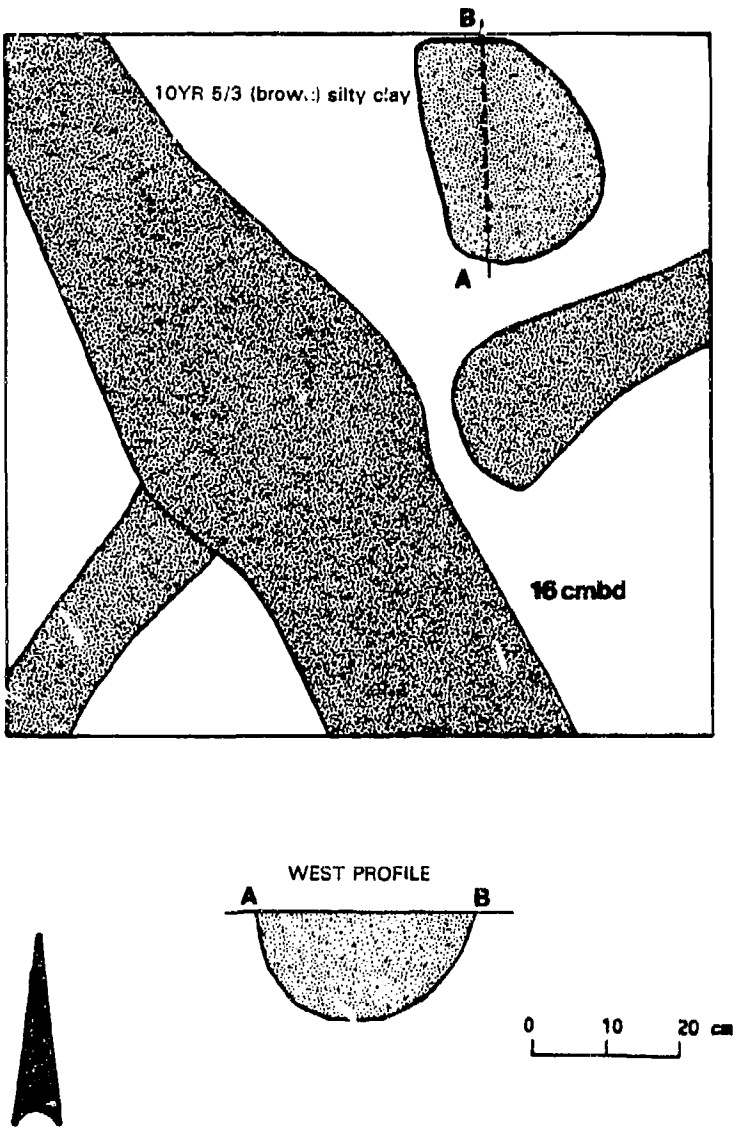


Figure 24. Planview and profile of Feature 2, EU N82.5 E125, Level B2.

was an irregular, oval, basin-shaped pit filled with Stratum B soil (10YR 4/2 [dark grayish brown] silty clay) with occasional flecks of charcoal. It extended into the Stratum C matrix (10YR 5/3 [brown] silty clay) to a depth of 32 cm below surface (37 cmbd). This small pit contained a relatively high concentration of artifacts (n=10) as well as 3.9 g of charcoal.

Artifacts from this pit, which was the only cultural feature encountered on the site, did not help positively determine its origin, although the presence of a glass fragment, a nail and lead shot strongly suggest that it dates to the historic period. However, the only ceramics from the pit were two sherds of Baytown Plain, *var. Unspecified*. Interestingly, floral material recovered from Feature 2 included 2 cupules of probable maize (Chapter 12).

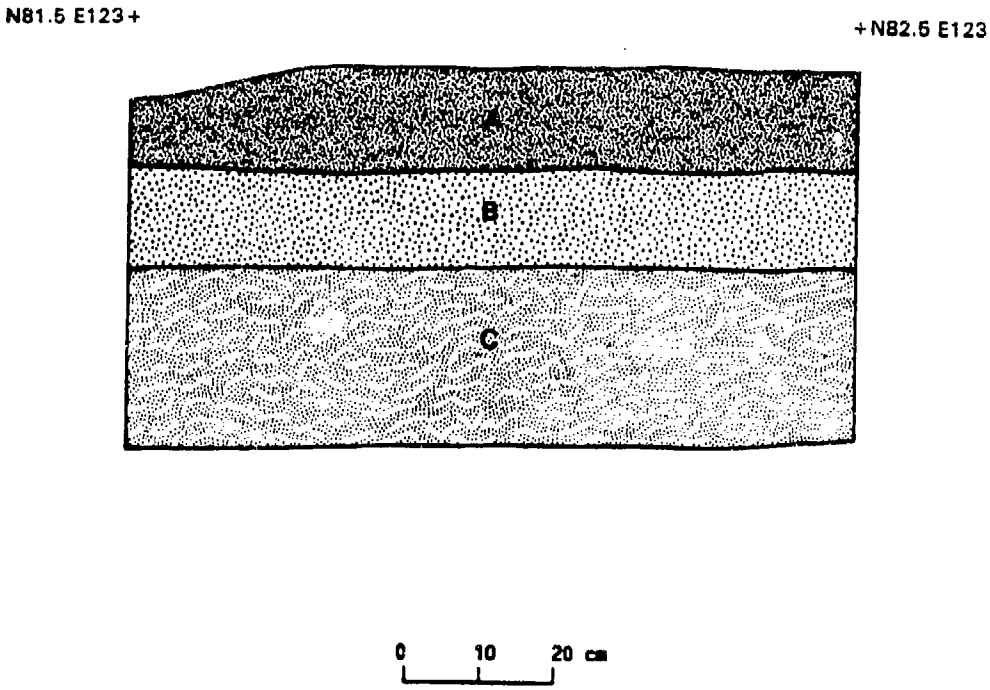
N82.5 E124. This unit was opened adjacent to EU N82.5 E125 (Figures 16 and 25) in order to determine whether Feature 2 was an isolate or whether it was associated with other features. EU N82.5 E124 was located on a very slight rise that was imperceptible during topographic mapping. However, ground surface sloped down 9 cm from west to east, and this appeared to be the only possible "mound" such as are typical of other *Isleño* sites.

Because of the slope in the ground surface, Strata A and B were removed in multiple levels. Level A-1 (5-10 cmbd), which removed only the top cm of the westernmost portion of the unit, contained only 3 g of daub (Table 12). Levels A-2 (10-15 cmbd) and A-3 (15-20 cmbd) contained lead shot (n=13), a creamware sherd and a sherd of Baytown Plain, *var. Cataouatche*, as well as small amounts of metal, bone, charcoal, and daub. Excavation of Level A-3 removed the remaining Stratum A soil from the southeastern corner of the unit.

Level B-1 (15-20 cmbd), which began removal of Stratum B in the western half of the unit, contained a large amount of bone (n=64), a pipestem and a pipebowl fragment, both European and aboriginal sherds, as well as lead shot and nails. A slight concentration of daub and charcoal was noted in the northwest quarter of the unit. Level B-2 (20-25 cmbd) contained a wider variety of historic ceramic sherds, including green shell-edged pearlware. This was one of the later ceramic types found at the site, and the rim pattern is typical of the period after 1800 (George Miller, personal communication to Dawdy, 1994). The slight concentration of daub and charcoal flecking persisted in the northwest quarter, but it did not have defined edges and so did not appear to be a cultural feature. Krotavina (animal burrows and/or root stains) appeared in the eastern half of the unit within Level B-2. Level B-3 (25-30 cmbd) exhibited a marked decrease in artifact density (n=16).

Stratum C was encountered at 30 cmbd. As a result of the extensive bioturbation in the unit, Level C-1 (30-35 cmbd) yielded two historic and six aboriginal sherds. Similarly, Level C-2 (35-40) also contained cultural material (one creamware, one pearlware, and one aboriginal sherd). These artifacts were recovered from the area of natural disturbance in the western portion of the unit which became more clearly defined in Level C-2. It consisted of an amorphous zone of 10YR 4/2 (dark grayish brown) and 10YR 5/3 (brown) mottled silty clay, and it likely derived from root disturbance.

Further evidence of bioturbation was noted in Level C-3. A continuation of the animal burrow found in adjacent unit N82.5 E125 was defined along the east wall of the unit. In addition, a circular feature measuring approximately 20 cm in diameter was noted at 52 cmbd in the western, disturbed area. This was designated Feature 5 (Figure 26). Feature 5 was filled with a 10YR 4/2 (dark grayish brown) clayey silt and contained flecks of charcoal and daub. However, it only extended to a depth of 54 cmbd, and thus, was probably just a concentration of the dark grayish brown clayey silt within the larger mottled area. Despite the fact that the Feature 5 likely was not cultural in origin, its contents were floated. A single sherd of creamware and 4.7 g of charcoal were recovered.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 25. West profile, EU N82.5 E124.

Table 12. Artifacts from N82.5 E124.

	A1	A2	A3	B1	B2	B3	C1	C2	C3	Fea. 5	Total
Creamware		1		1	13	1	1	1		1	19
Mocha creamware					2						2
Pearlware				1	3	2		1	1		8
Green shell-edged pearlware					1						1
Flecked Lead-Glazed Redware							1				1
Olive glass					?						2
Brass button					1						1
Pipestem				1							1
Pipebowl				1							1
Unidentified nail				3							3
Wrought nail frag.					1						1
Lead shot		9	4	3	3	2					21
.38 cal. bullet					1						1
Unidentified metal			2			1					3
Unidentified metal (wt. in g)			0.1			0.7					0.8
Aboriginal ceramics			1	1	3	5	3	1			14
Sherdlets			6		3		3				12
Bone (count)		13	8	65	30	5					121
Bone (wt. in g)		0.29	1.04	2.28	1.87	0.63					6.11
Charcoal (wt. in g)			0.2		0.3	0.4					0.9
Daub (wt. in g)	3.0	1.3	2.3	9.8	13.8	14.6		1.7	7.4	4.7	58.6
Brick (wt. in g)				1.3		0.7					2.0
Fired clay (wt. in g)					7.7		0.1				7.8
Rangia (wt. in g)									0.2		0.2
Total		23	21	76	63	16	8	3	1	1	212

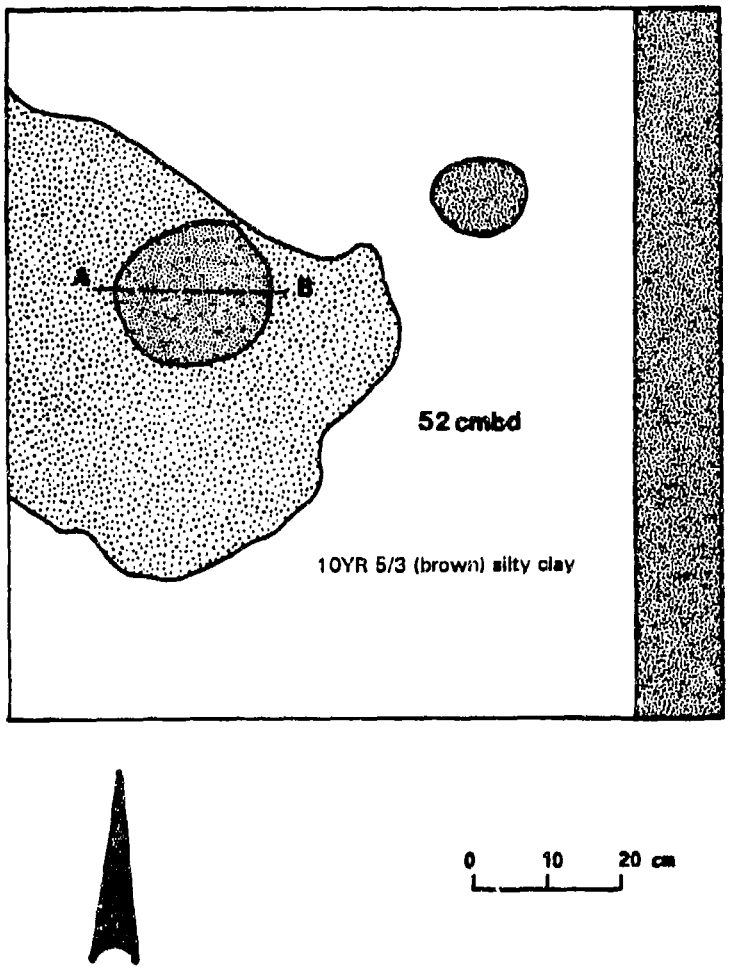


Figure 26. Planview and profile of Feature 5, EU N82.5 E124, Level C3.

Virtually all evidence of disturbance was removed in Level C-4 (52-57 cmbd). This level was completely sterile. The extensive bioturbation seen in EU N82.5 E124 may indicate that the slight rise noted in this location is natural in origin, and not a house mound related to the *Isleño* occupation of the site.

N84.5 E117.5. This unit was placed at the location of a magnetometer anomaly in the southwestern quadrant of Locus A (Figure 16). Level A-1 (5-10 cmbd) contained only four artifacts (creamware, pearlware, an unidentified nail, and metal), but Level A-2 (10-15 cmbd) produced a relatively large amount of daub (wt.=73.9 g), two pieces of lead shot, 19 historic sherds, and three undecorated aboriginal sherds (Table 13). Level B-1 exhibited a similar range of ceramics. The base of this level was characterized by root staining and the appearance of Stratum C soil in the northwest and southwest corners of the unit at 20 cmbd. Level B-2 (20-25 cmbd) was removed from the eastern and central portions of the unit. At the base of this level, an area of root disturbance, arcing from the northeast corner to central west wall of the unit, was clearly defined as a zone of Stratum B soil extending into Stratum C (Figures 27 and 28). It was noted that most of the artifacts recovered from this level (13 creamware sherds, a white bead, olive-green glass, a black gunflint, two tertiary flakes, and three pieces of lead shot) were recovered from the area of root disturbance. Levels B-3 (25-30 cmbd) and B-4 (30-35 cmbd) completed the excavation of the area of root disturbance. Artifacts recovered from these levels included daub, a tooth, a pewter button, and creamware sherds. Because this was the first unit excavated, the soil from Levels C-1 (20-25 cmbd) and C-2 (25-35) were water-screened to demonstrate that they were culturally sterile.

N84.5 E131. This unit was located in the southwestern portion of Locus A (Figure 16). Its placement was intended to intersect a magnetic anomaly in the vicinity of relatively rich artifact deposits. Level A-1 (0-5 cmbd) immediately yielded a fragment of olive bottle glass and historic ceramic sherds, including a Spanish Olive Jar fragment (Table 14). Level A-2 (5-10 cmbd) yielded more historic artifacts (n=20) as well as two aboriginal sherds. Flecks of charcoal were noted in the northern half of the unit during excavation of this level, but nothing definable as a feature was observed. Level B-1 (10-15 cmbd) was artifact-rich (n=49) and included Marine Ware, creamware, pearlware, olive-green glass, daub, brick fragments, and three pieces of lead shot. Artifact density decreased somewhat in Level B-2 (n=32), and Stratum C appeared at 20 cmbd across the northern three-quarters of the unit. However, a linear zone of Stratum B soil extended along the southern wall of the unit (Figure 29). This was designated Feature 1.

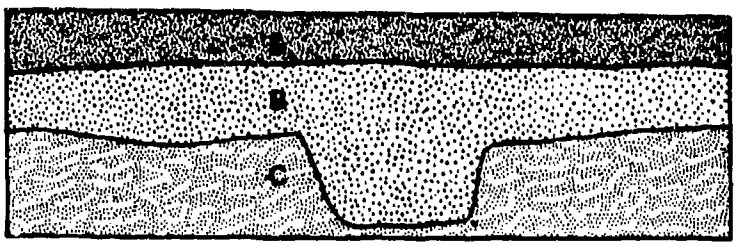
Feature 1 was removed as Levels B-3 and B-4, and its contents were floated. Artifacts were present in the feature fill, but they were far less abundant than was the case in Levels B-1 and B-2. The feature became narrower as it was excavated, but the shape remained basically linear (Figure 30). It extended to a depth of 33-36 cmbd. The floor of the feature was irregular and marked by a number of small circular depressions of various sizes. While the linearity of the feature at the top of Level B3 suggested that it was cultural in origin, the irregularity of its floor indicated that it was probably a root cast. When the latter was confirmed (see below), Levels C-1 (20-25), C-2 (25-30 cmbd) and C-3 (30-40 cmbd) were removed. All of the Stratum C levels in EU N84.5 E131 were sterile.

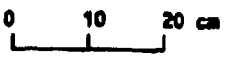
N84.5 E132. This unit was opened in the southeastern quadrant of the site adjacent to N84.5 E131 in order to reveal more of Feature 1 (Figure 31). Stratum A yielded a pearlware and a Saintonge Green-Glazed Buff Earthenware sherd, as well an aboriginal sherd, a cut nail, and a bullet (Table 15). The stratum extended to 5 cmbd. Level B-1 (5-10 cmbd) contained creamware, pearlware, a variety of coarse earthenwares, olive glass, lead shot, metal, and daub, as well as aboriginal ceramics. A palmetto root had disturbed the southwestern corner of this level. Level B-2 (10-15 cmbd) contained similar quantities and types of artifacts, although no pearlware was collected, and both Spanish Olive Jar and Marine Ware fragments

Table 13. Artifacts from N84.5 E117.5.

	A1	A2	B1	B2	B3	B4	Total
Creamware	1	8	14	13	6	5	47
Pearlware		3	1				4
Blue hand-painted pearlware	1	5	1	1			8
Flecked Lead-Glazed Redware		2	1	1		1	5
Bisque ware		1					1
Olive glass				2			2
White bead				1			1
Pewter Button					1		1
Gunflint (black)				1			1
Tertiary flake (honey-colored)			1	2			3
Wrought nail frag.		1					1
Unidentified nail	1		1		1	1	4
Lead shot		2		3			5
Unidentified metal	1	4	8	6	1	2	22
Unidentified metal (wt. in g)	1.5	3	6.7	4.5	1.2	1.4	18.3
Aboriginal ceramics		3	2				5
Bone (count)	2	4	6	9	2		23
Bone (wt. in g)	1.09	1.29	0.30	0.58	1.99		5.25
Daub (wt. in g)	10.3	73.9	59.4	12.3	12.3	3.0	171.2
Brick (wt. in g)				0.3			0.3
Total	6	33	35	39	11	9	133

N83.5 E116.5+ +N84.5 E116.5





A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay (dipping due to root disturbance)
C 10YR 5/3 (brown) silty clay with 7.5YR 5/6 (strong brown) mottling

Figure 27. West profile, EU N84.5 E117.5.

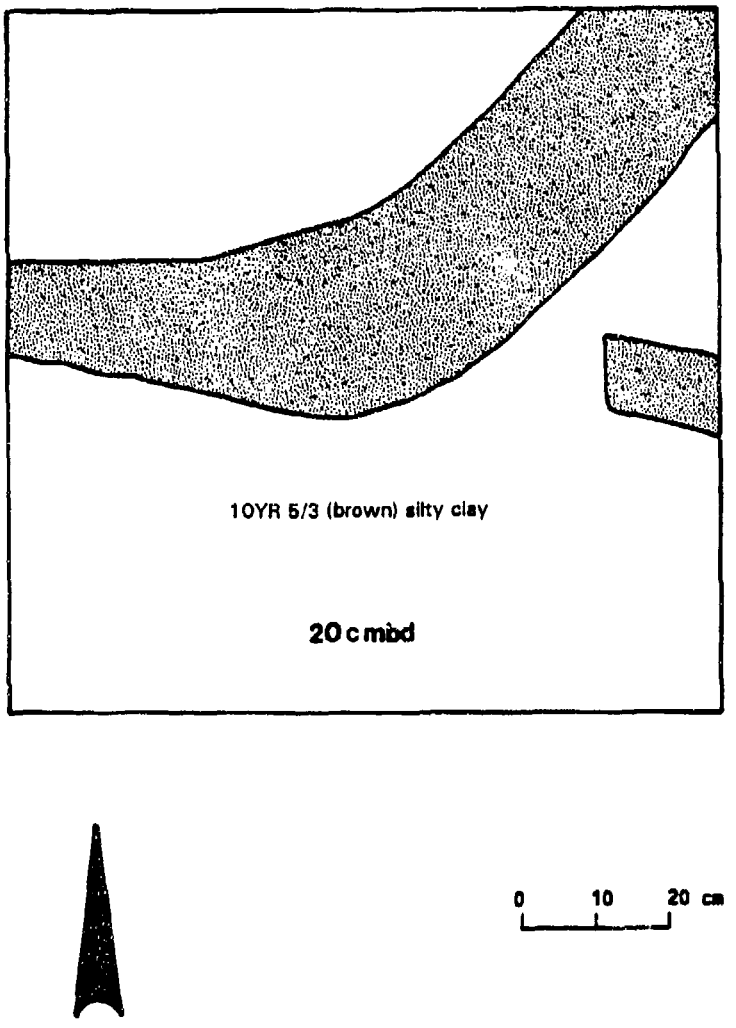


Figure 28. Planview of EU N84.5 E117.5

Table 14. Artifacts from N84.5 E131.

	A1	A2	B1	B2	Fea. 1 (B3)	Fea. 1 (B4)	Total
Creamware	1	4	18	12	2	2	39
Pearlware		2	4				6
Blue hand-painted pearlware		2	1	1			4
Polychrome hand-painted pearlware		1					1
Saintonge Green-Glazed Buff Earthenware	1		4	2			7
Flecked Lead-Glazed Redware			1				1
Manganese-Glazed Redware				1			1
Spanish Olive Jar	1	2	2	1			6
Marine Ware			1	1			2
Olive glass	1	2	9	1		2	15
Red mandrel wound bead			1				1
Pipestem				1			1
Tertiary flake						1	1
Wrought nail frag.		3	1				4
Unidentified nail				2			2
Lead shot		2	3	8	1	5	19
Lead sprue		1		1			2
Unidentified metal		1	3	1		3	8
Unidentified metal (wt. in g)		0.1	1.7	0.6		0.3	2.7
Aboriginal ceramics		1	1				2
Sherdlets		1					1
Bone (count)		18	36	48	1	11	114
Bone (wt. in g)		4.28	10.86	1.76	0.02	0.23	17.15
Daub (wt. in g)	0.3	7.2	30.5	8.3	2.3	8.9	57.5
Brick (wt. in g)		6.6	3.3	5.0			14.9
Fired clay (wt. in g)			10.6				10.6
Total	4	40	85	80	4	24	237

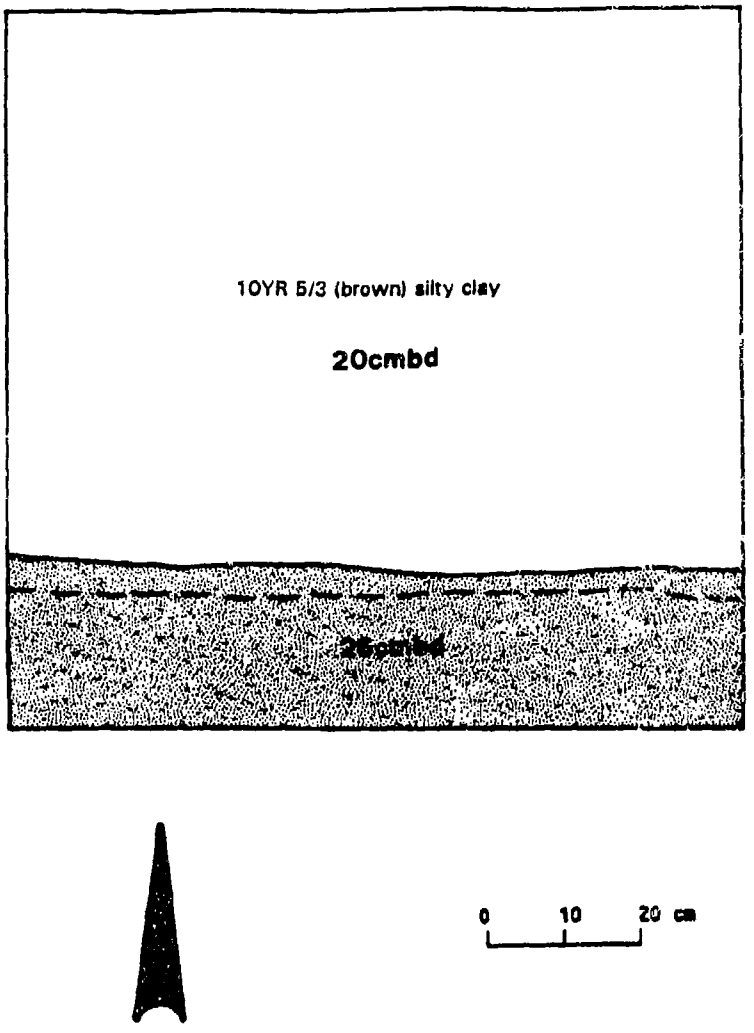


Figure 29. Planview of Feature 1, EU N84.5 E131, Level B3.

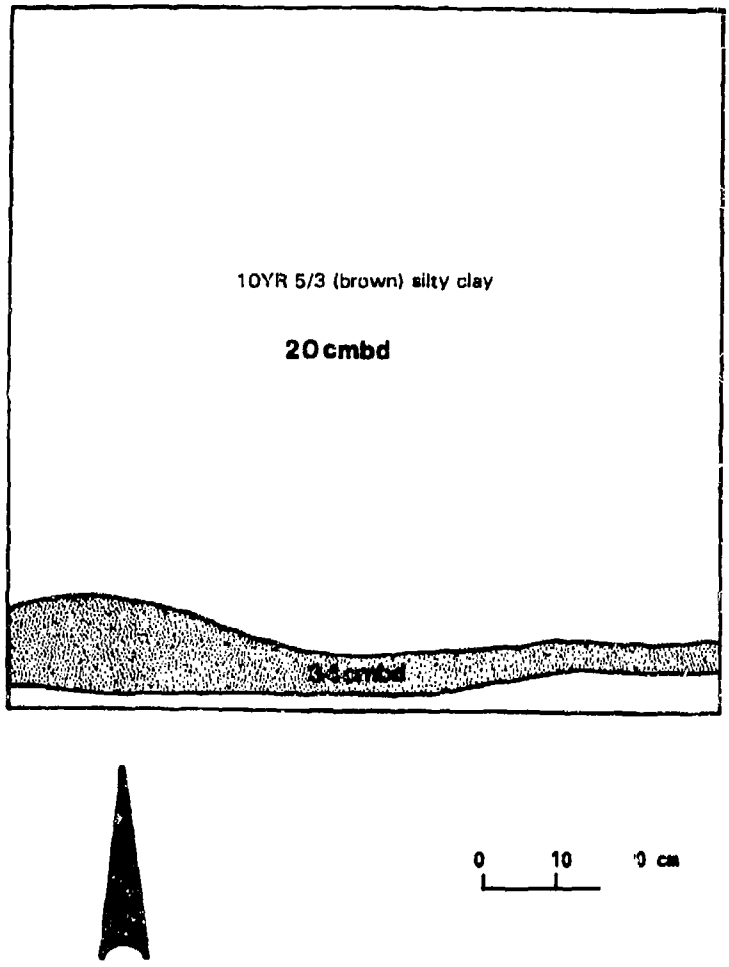
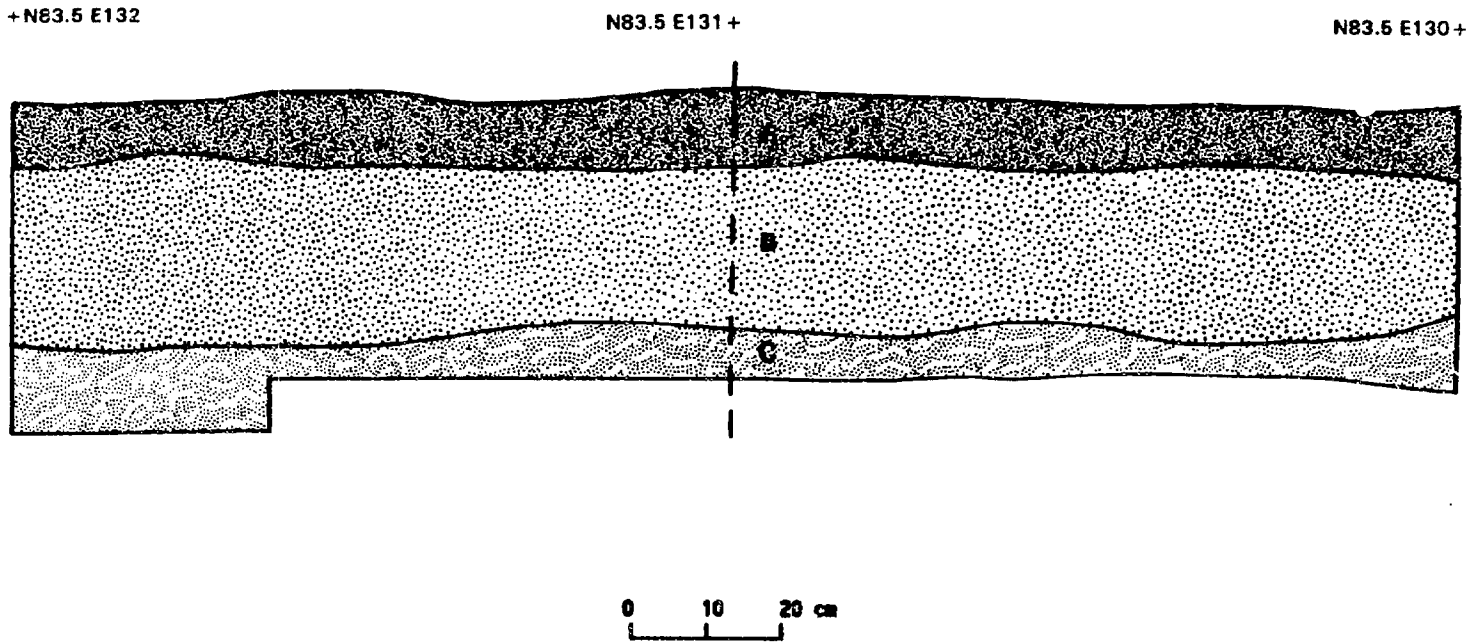


Figure 30. Planview of Feature 1, EU N84.5 E131, Level B4.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay (also includes Feature 1)
C 10YR 5/3 (brown) silty clay

Figure 31. South profile, EU N84.5 E131-132.

Table 15. Artifacts from N84.5 E132.

	A1	B1	B2	B3	Fea. 1 (B4)	Str. B	C1	Total
Creamware		6	7	4	5	1		23
Pearlware	1	4		1			1	7
Green shell-edged pearlware				1				1
Saintonge Green-Glazed Buff Earthenware	1		1		3			5
Saintonge White-Slipped and Green-Glazed Pink Earthenware?					1			1
Flecked Lead-Glazed Redware		1						1
Brown-Glazed Redware		3	3		2			8
Green-Glazed Redware		2						2
Marine Ware			1					1
Spanish Olive Jar			2	1				3
Olive glass		5	2		3			10
Gunflint (black)				1				1
Secondary flake					1			1
Square cut nail	1							1
Rose-headed wrought nail frag.					1			1
Unidentified nail		1	3					4
Lead shot		2	2					4
Bullet	1							1
Unidentified metal		3			8			11
Unidentified metal (wt. in g)		0.9			1.7			2.6
Aboriginal ceramics		1	3		1			5
Sherdlets	1	2						3
Unifacially retouched chert flake					1			1
Bone (count)	1	32	28	3	16			80
Bone (wt. in g)	2.2	5.09	2.17	0.15	0.48			10.09
Daub (wt. in g)		50.1	8.5	6.3	9.9			74.8
Brick (wt. in g)	0.1							0.1
Fired clay (wt. in g)			0.10	0.05	0.01			0.11
Total	6	62	52	11	42	1	1	175

were found. Three sherds of Mazique Incised *var. Unspecified* were also recovered. Artifact density decreased in Level B-3 (n=8), and Feature 1 was revealed at 20 cmbd. As was the case in EU N84.5 E131, Feature 1 was linear in appearance, and extended along the south wall of the unit (Figure 32).

Feature 1 continued to have a clearly linear outline in plan view and trench-like in cross-section (Figure 33). Because the homogenous nature of Feature 1 had been demonstrated in the adjacent unit, the feature was excavated to a depth of ca. 35 cmbd as Level B-4. The excavated soils were floated in their entirety. Interestingly, artifact density was somewhat greater in EU N84.5 E132 than it was in the adjacent unit (Table 15). Artifacts included a unifacially retouched chert flake that may have been a gunflint, along with creamware, Brown-Glazed Redware, olive-green glass, and a rose-headed wrought nail fragment. In addition to three sherds of Saintonge Green-Glazed Buff Earthenware, a possible sherd of Saintonge White-Slipped and Green-Glazed Pink Earthenware was found. The latter is far less common on late-eighteenth-century sites than the former (Yakubik 1990).

The floor of Feature 1 in EU N84.5 N132 also was characterized by five circular depressions of various sizes (Figure 34). Given the linear nature of the feature, these depressions possibly represented puncheon-style post holes, although some appeared to more closely resemble root casts. Therefore, a third unit was opened with the hope that it would definitively determine whether the feature was natural or cultural in origin. After completion of the third unit, Level C-1 (20-25 cmbd), which contained a single pearlware sherd, was removed. Level C-2 (25-40 cmbd), however, was sterile.

N83.8 E130. This was the third unit opened in an effort to determine if trench-like Feature 1 was natural or cultural in origin. Level A-1 (5-10 cmbd) was sterile, but Level A-2 (10-13 cmbd) contained two creamware sherds, a Spanish Olive Jar sherd, black glass, olive glass, and daub (Table 16). Stratum B had a lower artifact concentration than its equivalents in the adjacent units (n=74). Levels B-1 (13-18 cmbd) and B-2 (18-23 cmbd) contained a majority of creamware (56%), as well as examples of coarsewares such as El Morro Ware, Spanish Olive Jar, and Manganese-Glazed Redware. Lead shot, olive glass, and unidentifiable nails were also found. Aboriginal sherds were collected, but all were undecorated. Stratum C appeared at 23 cmbd, as did Feature 1 (Figure 35).

Feature 1 was removed in one level for flotation (ca. 50 liters). A concentration of small historic artifacts were noted in its fill (19 creamware sherds, daub, and nails, etc.). The feature was excavated to a depth of 43 to 46 cmbd, demonstrating a pronounced downward slope from its previous depths in the adjacent units (33-36 cmbd). Additionally, in plan view, the feature began to curve noticeably to the southwest (Figure 35). The floor was again pock-marked with small, irregular depressions, but now it had become clear that these were feeder roots extending down from a large, horizontal tree root (Plate 5). Similarly, the cross-section of the feature was irregular and far less trench-like (Figure 36) than seen in EU N84.5 E132 (Figure 33).

Stratum C was sterile except for a single creamware sherd marked "& Co./...FFORD." Unfortunately, the mark was too fragmentary to be identified. The sherd was recovered from the area of root disturbance along the west wall in Level C-1 (23-28 cmbd).

N85.1 E123. This unit was located near the center of Locus A on the crest of the small rise described above (Figure 16). The location was selected because of its proximity to two rich shovel tests excavated by LAS. No magnetic anomalies were noted in this area.

Artifacts recovered from the unit are summarized in Table 17. Level A-1 (2-5 cmbd) contained a small pipestem fragment. Level A-2 (5-10 cmbd) was disturbed by a large root

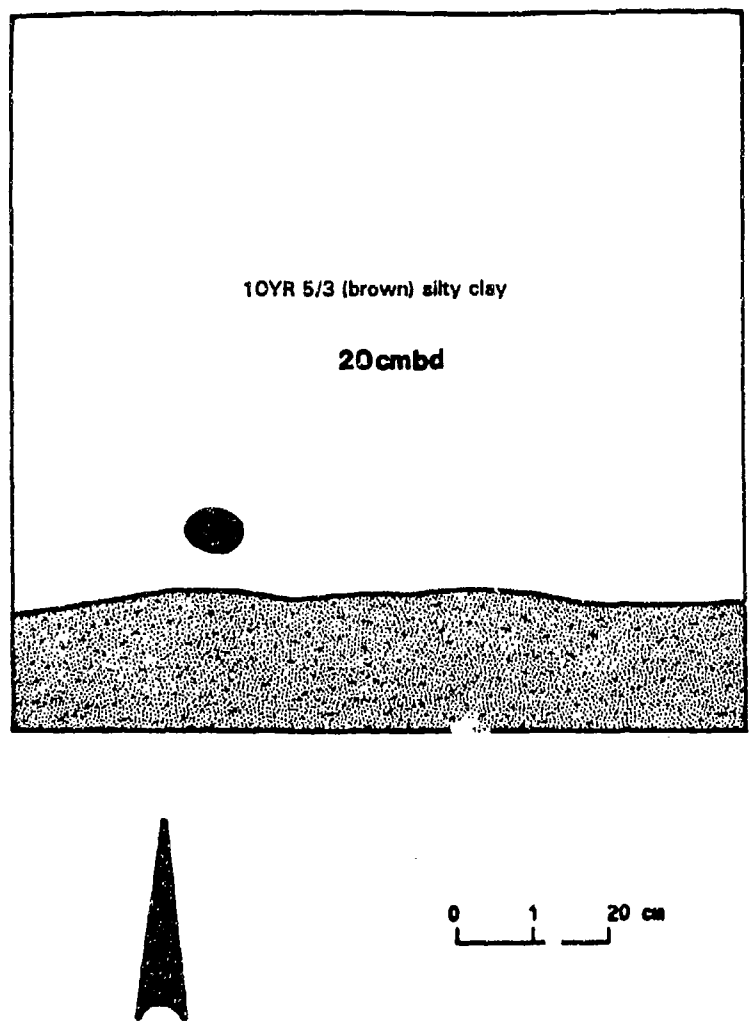
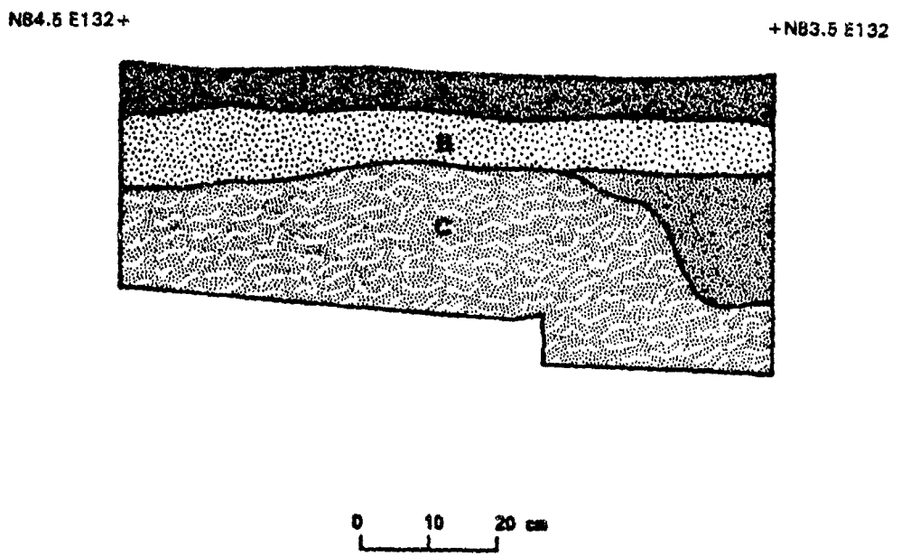


Figure 32. Planview of Feature 1, EU N84.5 E132, Level B3.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 33. East profile, EU N84.5 E132.

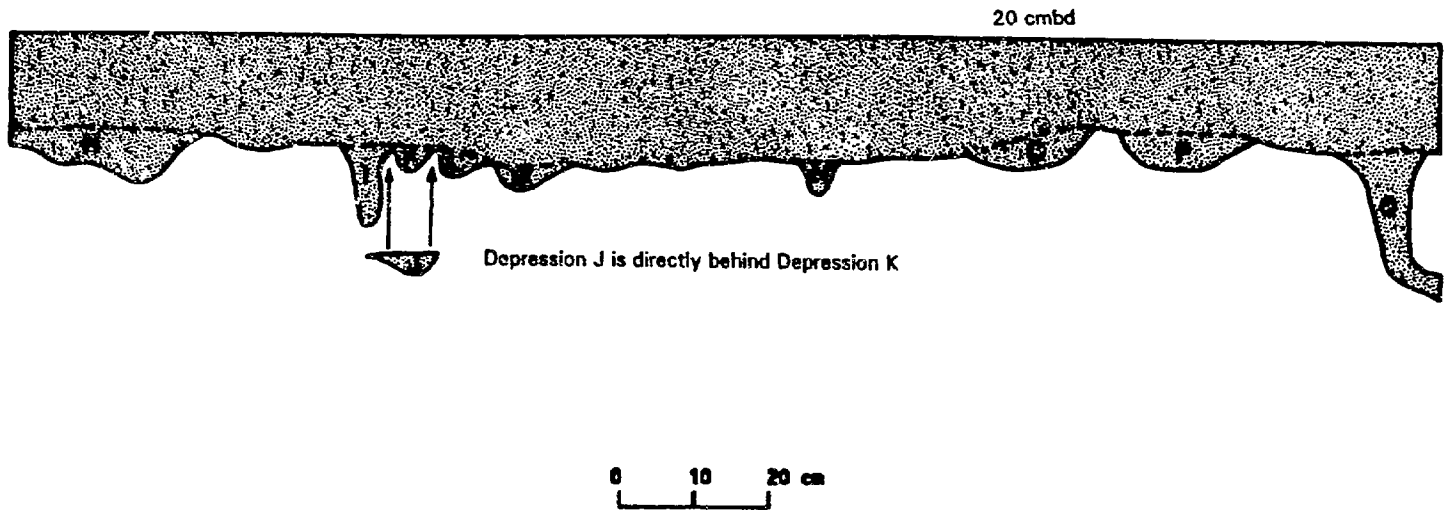


Figure 34. Profiles of depressions within Feature 1, EU N84.5 E131-132 (This is an imaginary cross-section plane that bisects each depression. For planview, see Figure 35).

Table 16. Artifacts from N83.8 E130.

	A2	B1	B2	Fea. 1 (B3)	Str B	C1	Total
Creamware	2	10	8	19		1	40
Blue hand-painted pearlware		1		1			2
Saintonge Green-Glazed Buff Earthenware		4	1	2			7
Flecked Lead-Glazed Redware		3		3			6
Manganese-Glazed Redware			1				1
Brown-Glazed Redware			1				1
El Morro Ware			1				1
Spanish Olive Jar	1	2			1		4
Unidentified sandy paste sherd, unglazed					1		1
Olive glass	2	2					4
"Black" glass	1			1			2
Tertiary flake (honey-colored)			1				1
Unidentified nail		2		3			5
Lead shot			3				3
Unidentified metal		2		1			3
Unidentified metal (wt. in g)		0.3		16.9			17.2
Aboriginal ceramics		1	4				5
Sherdlets		4					4
Bone (count)			4	3			7
Bone (wt. in g)			0.09	1.44			1.53
Daub (wt. in g)	2.4	8.0	0.8	19.0			30.2
Fired clay (wt. in g)		0.3	1.1				1.4
Total	6	31	24	33	2	1	97

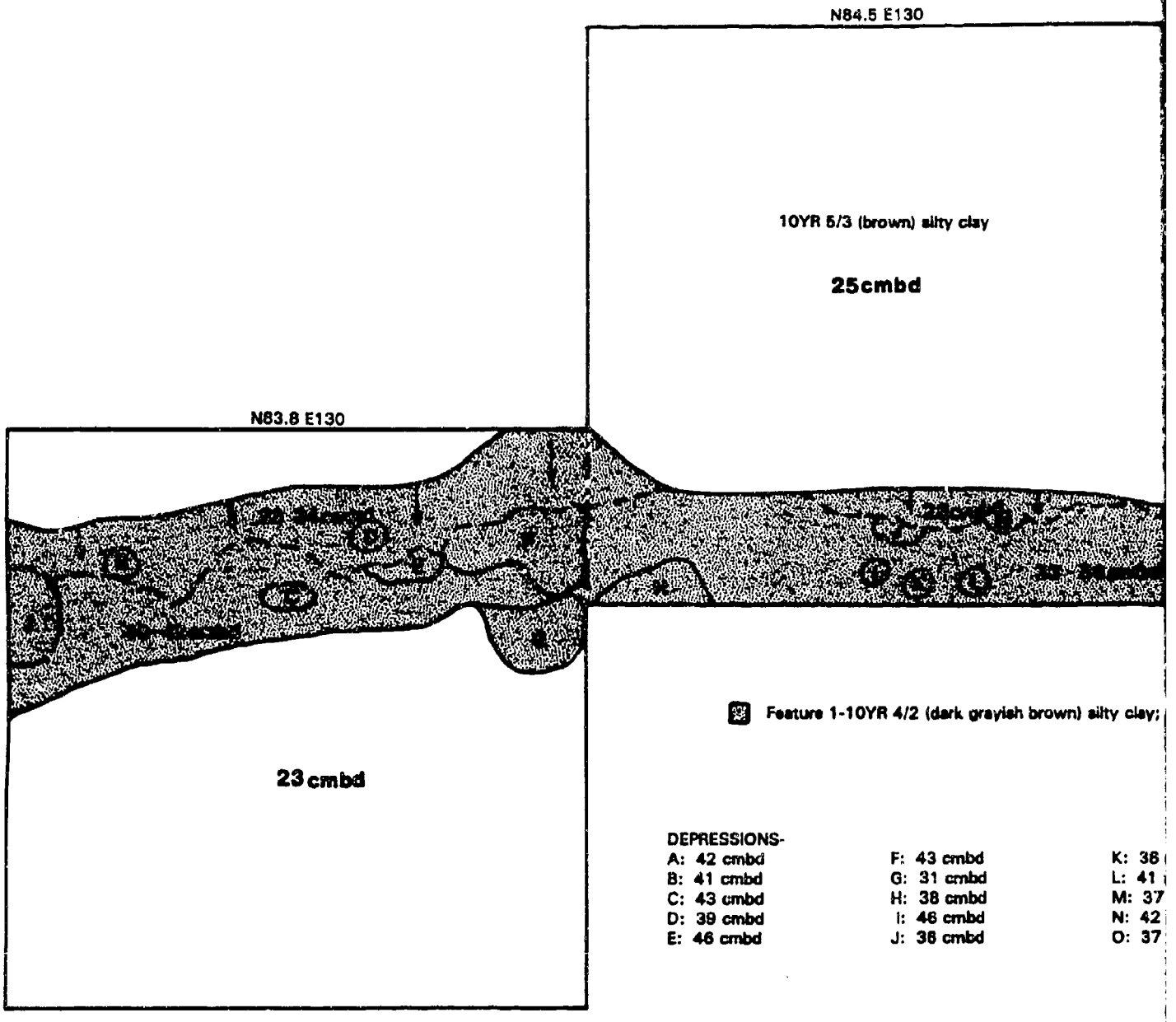
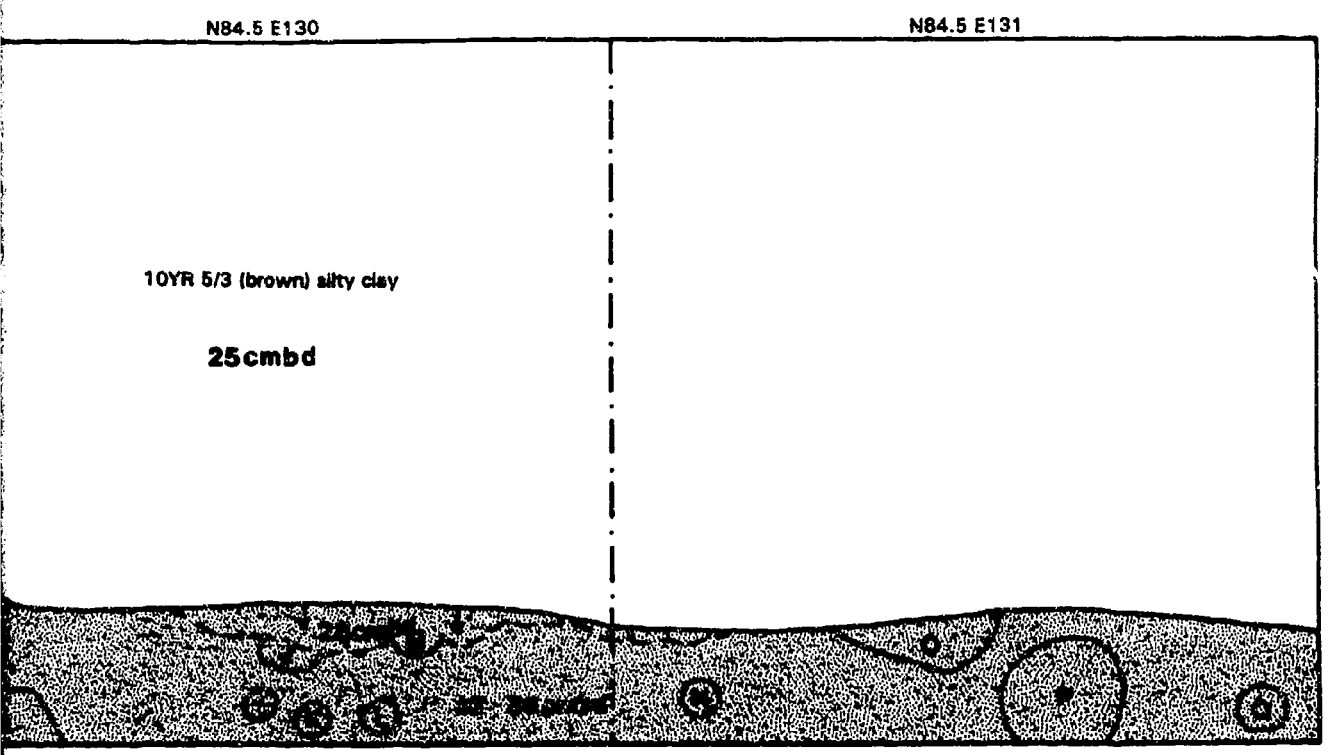


Figure 35. Planview of Feature 1, EU N83.8 E130, N84.5 E131-132, a



Feature 1-10YR 4/2 (dark grayish brown) silty clay; slopes to dotted line

0 10 20 cm

DEPRESSIONS-

A: 42 cmbd	F: 43 cmbd	K: 38 cmbd	P: 38 cmbd
B: 41 cmbd	G: 31 cmbd	L: 41 cmbd	Q: 52 cmbd
C: 43 cmbd	H: 38 cmbd	M: 37 cmbd	
D: 39 cmbd	I: 46 cmbd	N: 42 cmbd	
E: 46 cmbd	J: 36 cmbd	O: 37 cmbd	

Feature 1, EU N83.8 E130, N84.5 E131-132, after excavation.

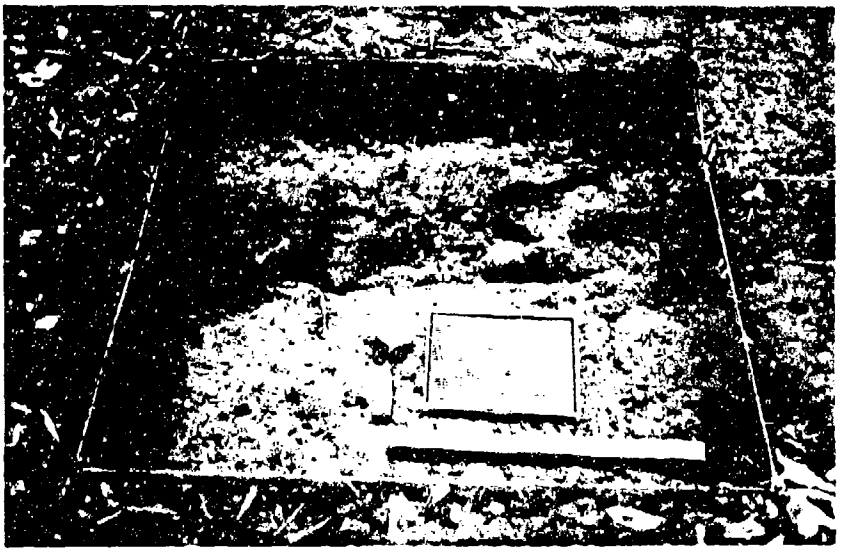


Plate 5. EU N83.8 E130 showing Feature 1 after excavation.

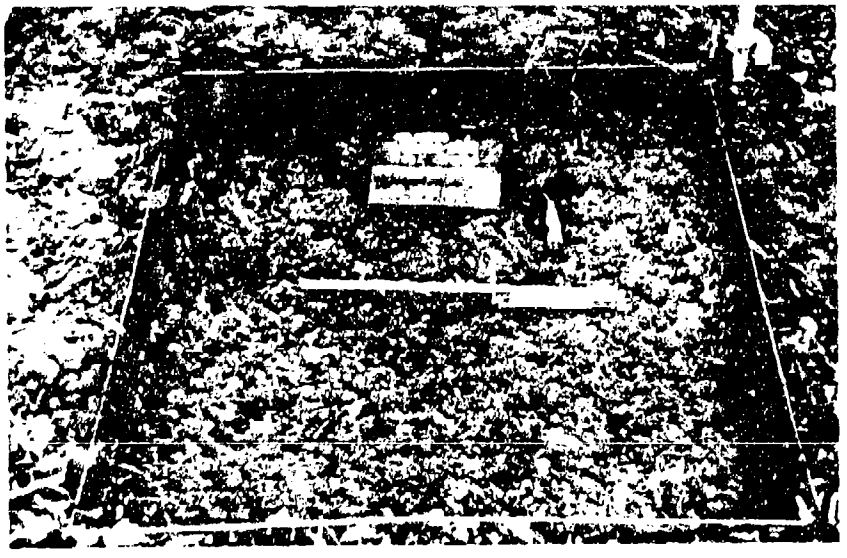
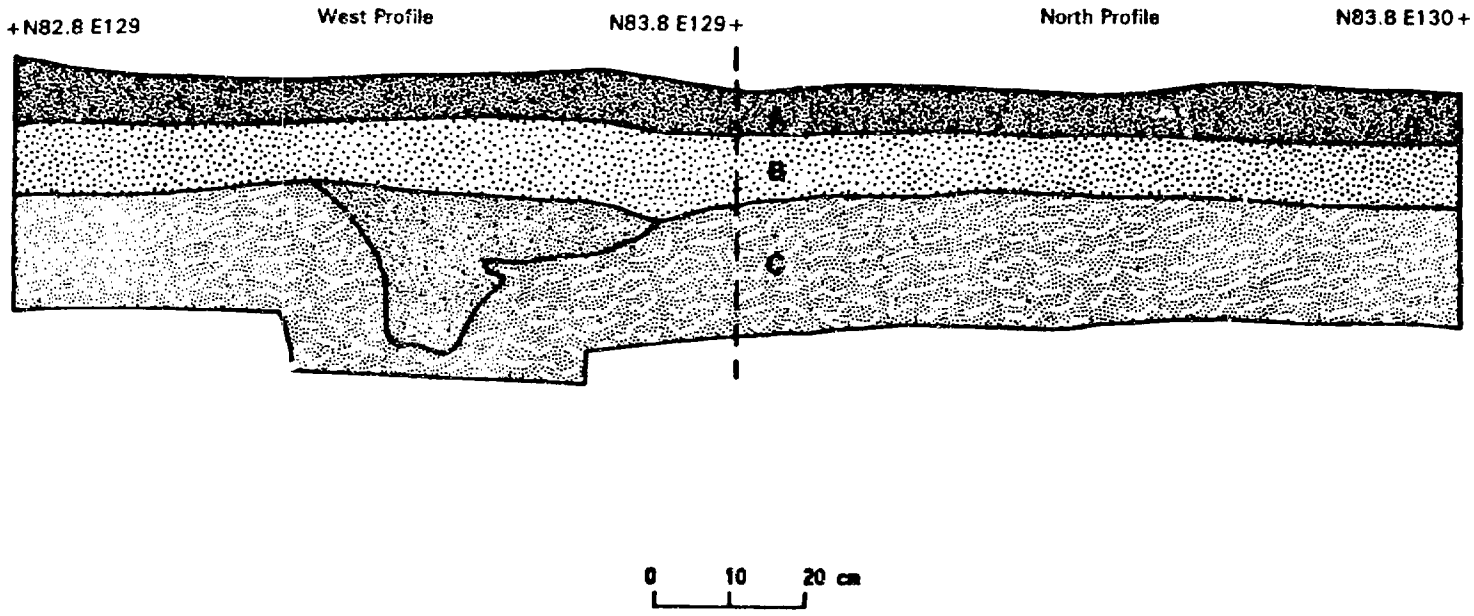


Plate 6. EU N92 E120.5 showing top of shell midden.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 36. North and west profiles, EU N83.8 E130.

Table 17. Artifacts from N85.1 E123.

	A1	A2	B1	B2	C1	Total
Creamware		1	5	3	1	10
Annular creamware			1			1
Pearlware			3			3
Green shell-edged pearlware				1		1
Saintonge Green-Glazed Buff Earthenware			1		1	2
Flecked Lead-Glazed ware			1	1		2
Marine Ware		1	4	1		6
Olive glass			12	6		18
Pipestem	1		1			2
Pipebowl (embossed bird)			1			1
Gunflint (black)			2			2
Gunflint (honey-colored)				1		1
Tertiary flake (black)			1			1
Black pea gravel			1			1
Wrought nail frag.			5			5
Unidentified nail			3			3
Lead shot			7	9		16
Unidentified metal			3	1		4
Unidentified metal (wt. in g)			2.2	0.5		2.7
Aboriginal ceramics			1	2	7	10
Sherdlets		1		5	2	8
Bone (count)		2	68	47		117
Bone (wt. in g)		0.24	8.25	2.28		10.77
Daub (wt. in g)		1.0	82.7	2.3		86.0
Brick (wt. in g)				1.0		1.0
Fired clay (wt. in g)		4.5				4.5
Total	1	5	120	77	11	214

and contained two historic ceramic sherds, an aboriginal sherd, and a small amount of daub (wt.=1 g). Artifact density increased dramatically in Stratum B. Level B-1 (10-15 cmbd) yielded the creamwares, pearlwares, and coarsewares seen in other units, as well as nails, pipe fragments, gunflints and flint flakes, lead shot, glass, and an aboriginal sherd. A relatively large amount of daub was collected (wt.=82.7 g), and charcoal flecking was noted during excavation. Level B-2 (15-20 cmbd) yielded less than half the number of historic artifacts as the previous level (n=23), but seven aboriginal sherds and sherdlets were recovered. Historic items decreased to two in Level C-1(20-25 cmbd), but four Addis Plain, three Baytown Plain, and two aboriginal sherdlets were collected. Level C-2 (25-35 cmbd) was sterile (Figure 37).

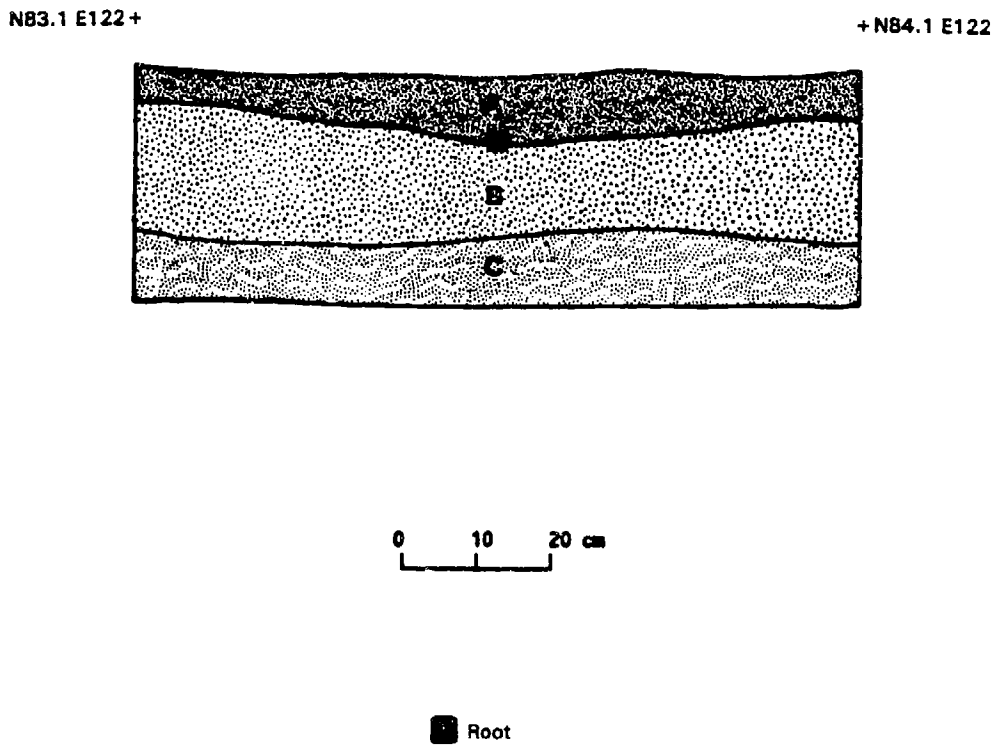
N86 E129. This unit was located in the southeastern quadrant of Locus A. It was placed adjacent to the richest of the ESI shovel tests and directly south of a magnetic anomaly. Stratum A yielded a single creamware fragment, but artifact frequency increased in Stratum B, which was encountered at 5 cmbd (Table 18). Stratum B was notable for its range of coarseware sherds, including Saintonge Green-Glazed Buff Earthenware, Flecked Lead-Glazed Redware, Green-Glazed Redware, Brown-Glazed Redware, Manganese-Glazed Redware, Mottled Green/Brown Lead-Glazed Redware, and Spanish Olive Jar. Despite the wide variety of late-eighteenth-century coarsewares, a whiteware sherd (post-1820) was recovered from Level B-1 (5-10 cmbd). Concentrations of charcoal were noted in the southeast and southwest corners of the unit in this level, but they were associated with tree roots rather than cultural features. The artifact frequency in Level B-2 (10-15 cmbd) was still higher than that in Level B-1. In addition to ceramics, pipe fragments, nails, and chert flakes were collected. Nine aboriginal sherds were also found. At the base of this level, the area of root disturbance persisted as an area of Stratum B soil within a Stratum C matrix (Figures 38 and 39). Level C-1 (15-20 cmbd) contained three sherds retrieved from this disturbed area. Level C-2 (20-30 cmbd) was completely sterile.

N87 E129. This excavation unit was located in the southeastern quadrant of the Locus A (Figure 16). It was placed to intersect a magnetometer anomaly in the vicinity of relatively rich artifact deposits. Numerous tree roots were encountered in Level A-1 (0-5 cmbd), which contained only a single tertiary flake (Table 19). Level A-2 (5-10 cmbd) yielded artifacts towards its base, where it interfaced with Stratum B. Eight creamware sherds, two pearlware sherds, a Saintonge Green-Glazed Buff Earthenware sherd, an olive glass fragment, a red mandrel wound bead, two small pieces of lead shot, and a black gunflint fragment were found. Level B-1 (10-15 cmbd) yielded more creamware and pearlware sherds, a bead matching that from the previous level, and three wrought nail fragments. Level B-2 (15-20 cmbd) was sterile and graded into Stratum C at its base (Figure 40). It was expected that Level C-1 (20-30 cmbd) would be sterile subsoil. Nevertheless, because this was one of the first units to be excavated, all soil from Stratum C was water-screened to confirm this expectation.

This was one of the few units placed to intersect a magnetic anomaly that did not yield evidence of a subsurface feature either of cultural or natural origin. It is assumed that the metal artifacts contained within the unit produced the signal.

N92 E120.5. This unit was located in the west-central portion of Locus A (Figure 16). Located to intersect a magnetic anomaly, this unit was also within the light surface scatter of *Rangia*. It is assumed that the shell midden in this locale is the source of the anomaly.

Artifacts recovered from the unit are summarized in Table 20. Some *Rangia* shells were collected in Level A-1 (0-5 cmbd) and a single sherd of Saintonge Green-Glazed Buff Earthenware was recovered during water-screening. The scatter of *Rangia* persisted in Level B-1 (5-10 cmbd) in the northwest and southwest corners of the unit. Another Saintonge sherd, a sherd of Baytown Plain, *var. Crown Point*, and a tertiary flake were found during water-screening. Level B-2 (10-12 cmbd) was shallow, and it was discovered that Stratum B graded

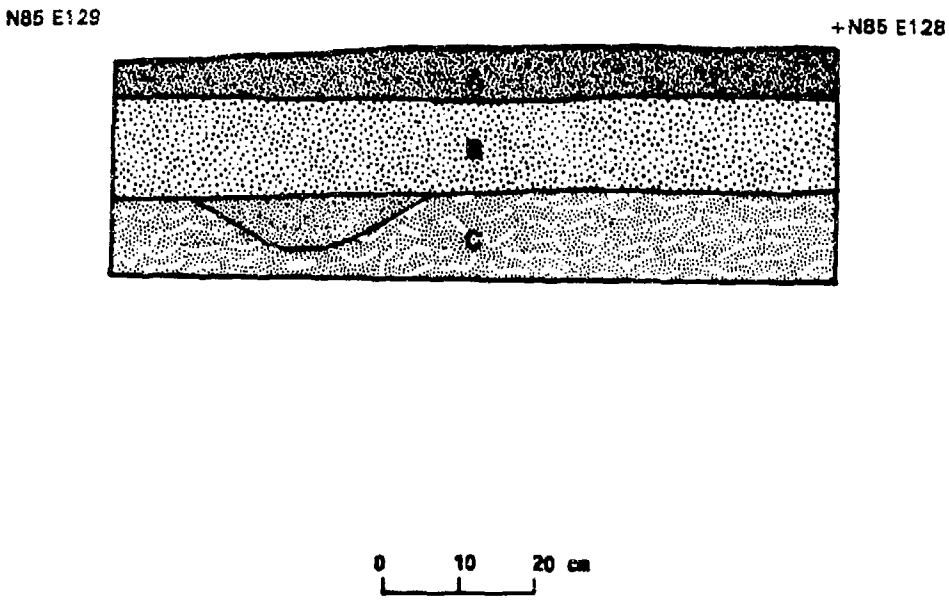


A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 37. West profile, EU N85.1 E123.

Table 18. Artifacts from N85 E129.

	A1	B1	B2	Str. B	C1	Total
Creamware	1	10	17	1	1	30
Pearlware		1	1	1		3
Blue hand-painted pearlware		1	2			3
Whiteware		1				1
Saintonge Green-Glazed Buff Earthenware		3	5			8
Flecked Lead-Glazed Redware			1		1	2
Green-Glazed Redware			1			1
Brown-Glazed Redware		2	2			4
Manganese-Glazed Redware			1			1
Mottled Green/Brown Lead-Glazed Redware		1				1
Spanish Olive Jar		1	1			2
Olive glass		3	3			6
Copper alloy button		1				1
Pipestem			1			1
Secondary flake			1			1
Tertiary flake			1			1
L-headed wrought nail				1		1
Wrought nail frag.		1	2			3
Unidentified nail		1				1
Lead shot		4	4			8
Aboriginal ceramics			9			9
Sherdlets		3	1		1	5
Bone (count)		22	63			85
Bone (wt. in g)		3.80	2.12			5.92
Daub (wt. in g)		19.8	63.1			82.9
Brick (wt. in g)			3.1			3.1
Total	1	55	116	3	3	178



A 10YR 3/2 (very dark grayish brown) silty clay loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay with 7.5YR 5/6 (strong brown) mottling

Figure 38. South profile, EU N86 E129.

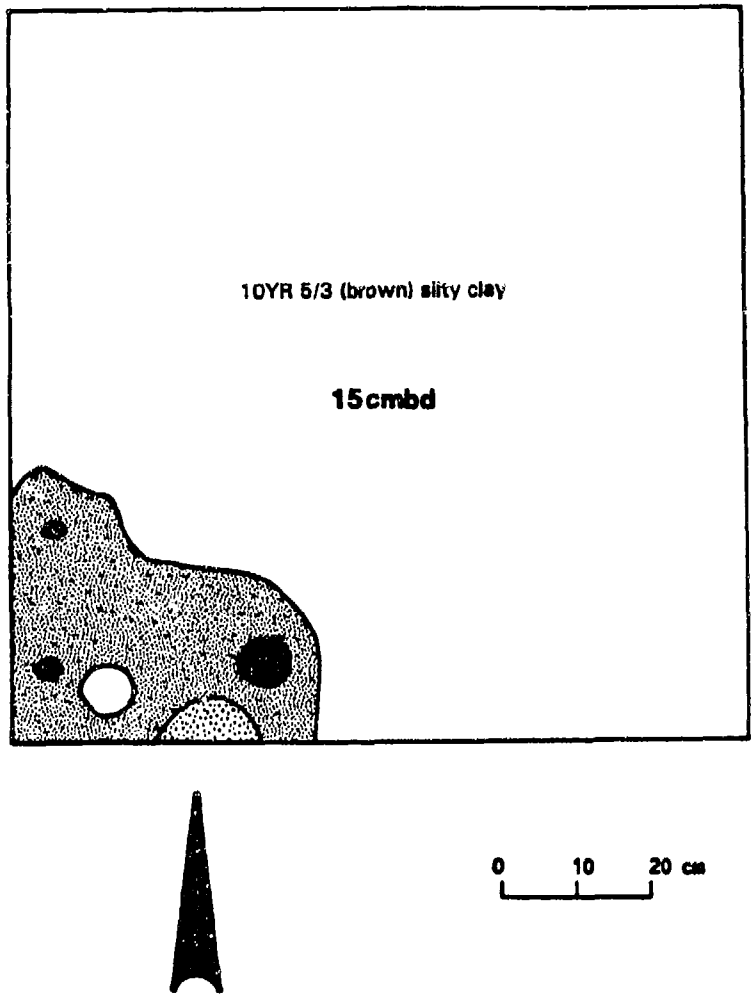
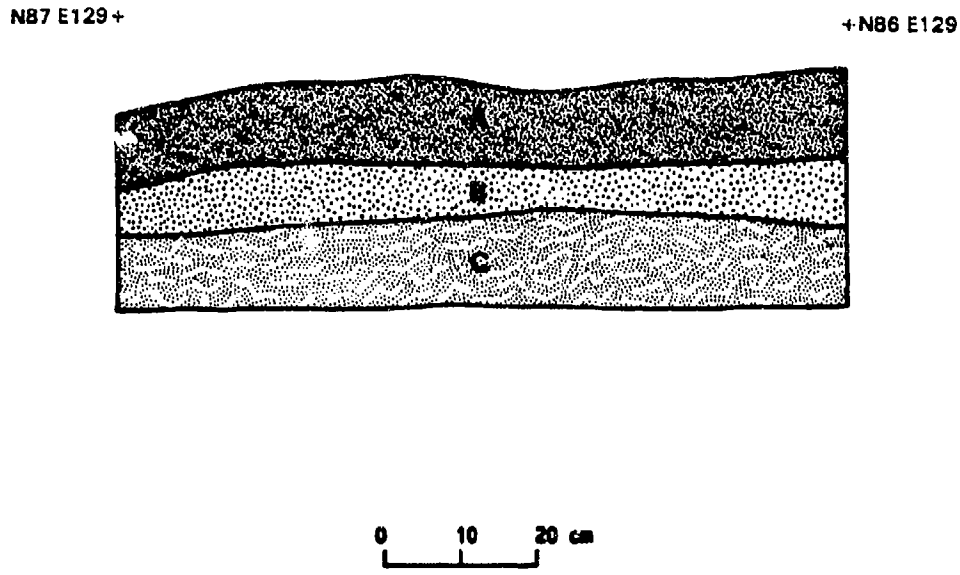


Figure 39. Planview of EU N86 E129, Level B2.

Table 19. Artifacts from N87 E129.

	A1	A2	B1	Str. B	Total
Creamware		8	4		12
Pearlware		2	3		5
Blue hand-painted pearlware			2		2
Green shell-edged pearlware			1		1
Saintonge Green-Glazed Buff Earthenware		1			1
Brown-Glazed Redware			1		1
Olive glass		1	1		2
Red mandrel wound bead		1	1		2
Gunflint (black)		1			1
Tertiary flake	1				1
Wrought nail			1		1
Wrought nail frag.			2		2
Lead shot		2			2
Unidentified metal		1			1
Unidentified metal (wt. in g)		0.2			0.2
Aboriginal ceramics		1			1
Bone (count)		5	7	1	12
Bone (wt. in g)		0.53	0.46	2.77	0.99
Daub (wt. in g)		8.3	5.7		14.0
Total	1	23	23	1	47



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay with 7.5YR 5/6 (strong brown) mottling

Figure 40. East profile, EU N87 E129.

Table 20. Artifacts from N92 E120.5.

	A1	B1	B2	D1	D2	D3	Total
Creamware				2			2
Green shell-edged pearlware				1			1
Saintonge Green-Glazed Buff Earthenware	1	1	1				3
Flecked Lead-Glazed Redware			1				1
Brass button			1				1
Pipebowl			1				1
Tertiary flake (honey-colored)		1					1
Wrought nail				1			1
Wrought nail frag.				1			1
Lead shot			1				1
Unidentified metal			1				1
Unidentified metal (wt. in g)			1.4				1.4
Aboriginal ceramics		1	2	4			7
Sherdlets		1	5	4			10
Bone (count)		7	21	34	25	1	88
Bone (wt. in g)		0.56	2.37	6.48	3.33	1.05	13.79
Daub (wt. in g)				1.8	0.2		2.0
Fired Clay (wt. in g)				0.03			0.03
Rangia (wt. in g)	68.0	115.1	586.4	2701.8	3546.7	248.8	7266.8
Total	1	11	34	47	25	1	119

into a well-defined shell midden level, designated Stratum D (Figure 41, Plate 6). Despite its shallowness, Level B-2 yielded both historic and aboriginal ceramics, a pipebowl, a brass button, and lead shot.

Level D-1 (12-17 cmbd) contained a large amount of shell, two creamware sherds, a green shell-edged pearlware sherd, a wrought nail, a nail fragment, and four sherds of Baytown Plain, *var. Cataouatche*. Thus, not even the shell midden was culturally pristine; it contained one of the later historic ceramic types found on the site. Level D-2 (17-22 cmbd) removed the last of the midden from all but the northwest corner of the unit; it contained nothing but shell. Level D-3 (20-22 cmbd) was the last level within the midden and, likewise, it yielded only shell. Below this, Stratum C was exposed. Levels C-1 (22-27 cmbd) and C-2 (27-37 cmbd) were sterile.

It should be noted that although the concentration of shell persisted for three excavation levels, it was relatively light throughout these. Consequently, Stratum D was not visible in profile (Figure 42).

N94 E124.5. This unit was located in the northeastern quadrant of Locus A on the edge of the surface scatter of *Rangia* (Figure 16). It was placed at the location of a magnetic anomaly. Level A-1 (1-5 cmbd) contained only a small amount of *Rangia*, and Level A-2 (5-10 cmbd) yielded only an aboriginal sherdlet, *Rangia*, two pieces of lead shot, amorphous metal, and a shattered bullet cartridge, as it graded into Stratum B (Table 21). Level B-1 (10-16 cmbd) exhibited a light shell scatter across the southern quarter of the floor (Figure 43). Twenty-one aboriginal sherds as well as two creamware sherds and more lead shot were found in this level. Unfortunately, 15 of the sherds were plain or too small to be identified, and the remainder had unclassifiable incised or incised and punctated decorations. Level B-2 (16-21 cmbd) contained fewer artifacts (n=6) and graded into Stratum C (Figure 44).

Level C-1 (21-26 cmbd) had the same basic soil type as elsewhere on the site (10YR 5/2 [brown] silty clay), but it was mottled with 10YR 5/6 (strong brown) silty clay. At the base of this level, two features were identified. Feature 3 was an irregular, semi-circular patch of 10YR 4/2 (dark gray brown) silty clay in the southwest corner. Feature 4 was a circular patch of the same soil in the southeast corner. These were excavated separately, and their total contents were taken as flotation samples. The only material recovered from either of these features was a small amount of *Rangia* from Feature 4. After excavation, profiles of the features indicated that they were clearly tree roots. Level C-2 (26-36 cmbd) was completely sterile.

N99 E127. This unit was located in the northeastern quadrant of Locus A (Figures 16 and 45). It was placed to intersect with a magnetic anomaly. Few artifacts were recovered from the unit (Table 22). Stratum A (2-5 cmbd) contained a piece of unidentified metal, and charcoal flecking was noted during excavation. Stratum B (5-10 cmbd) contained only a sherd of Unclassified Incised on Baytown Plain, *var. Cataoutache* and a minute amount of daub (wt.=1.5 g). Level C-1 (10-20 cmbd) was practically sterile, but it yielded 0.1 g of daub. The source of the magnetic anomaly in this locale is unknown.

N104.5 E126.5. This was the northernmost unit placed at the site (Figure 16). Its position was selected because a magnetic anomaly was noted in this area (Figure 20). Lying approximately 20 m north of the center of Locus A, EU N104.5 E126 evidenced a stratigraphy distinct from the other units (Figure 46). Both Stratum A and Stratum C were present and identical to those seen in the other units, but Stratum B was absent. Instead, Stratum C occurred directly below Stratum A at 10 cmbd. The unit was entirely sterile. This unit con-

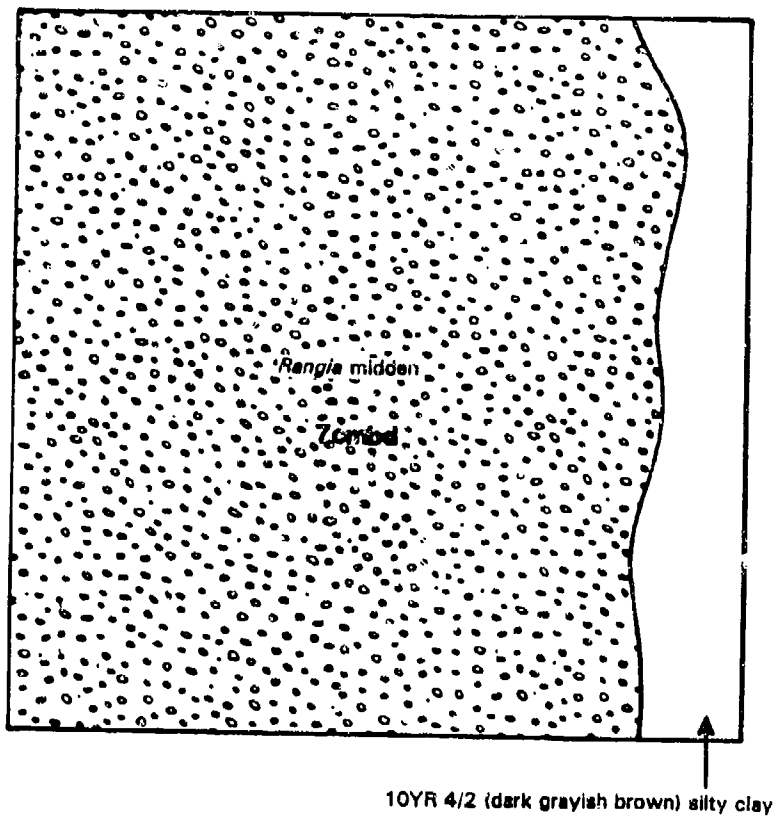
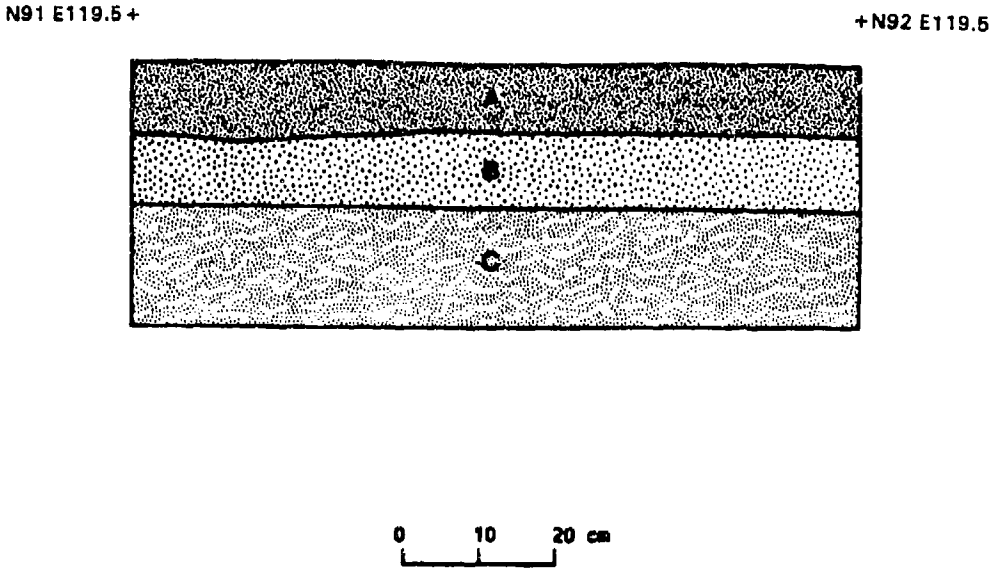


Figure 41. Planview of EU N92 E120.5, Level D1.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay with 7.5YR 5/6 (strong brown) mottling

Figure 42. West profile, EU N92 E120.5.

Table 21. Artifacts from N94 E124.5

	A1	A2	B1	B2	Fea. 4	C1	Total
Creamware			2	1			3
Flecked Lead-Glazed Redware				1			1
Unidentified nail			1				1
Lead shot		2	2				4
Shattered bullet cartridge		1					1
Unidentified metal		1					1
Unidentified metal (wt. in g)		1.2					1.2
Aboriginal ceramics			16	3		2	21
Sherdlets		1	5	1			7
Bone (count)			2		1		3
Bone (wt. in g)			1.71		0.03		1.74
Daub (wt. in g)			0.3	0.1		0.2	0.6
Rangia (wt. in g)	3.9	6.5	40.7	71.5	7.3	7.1	137.0
Total		5	28	6	1	2	42

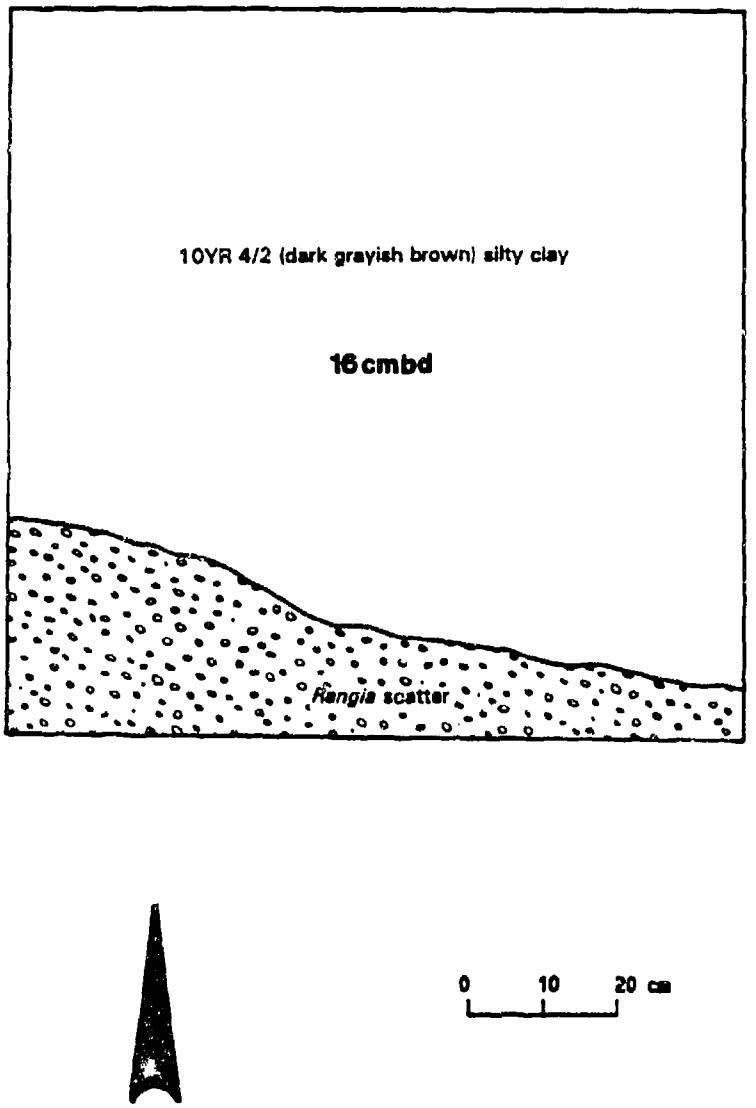
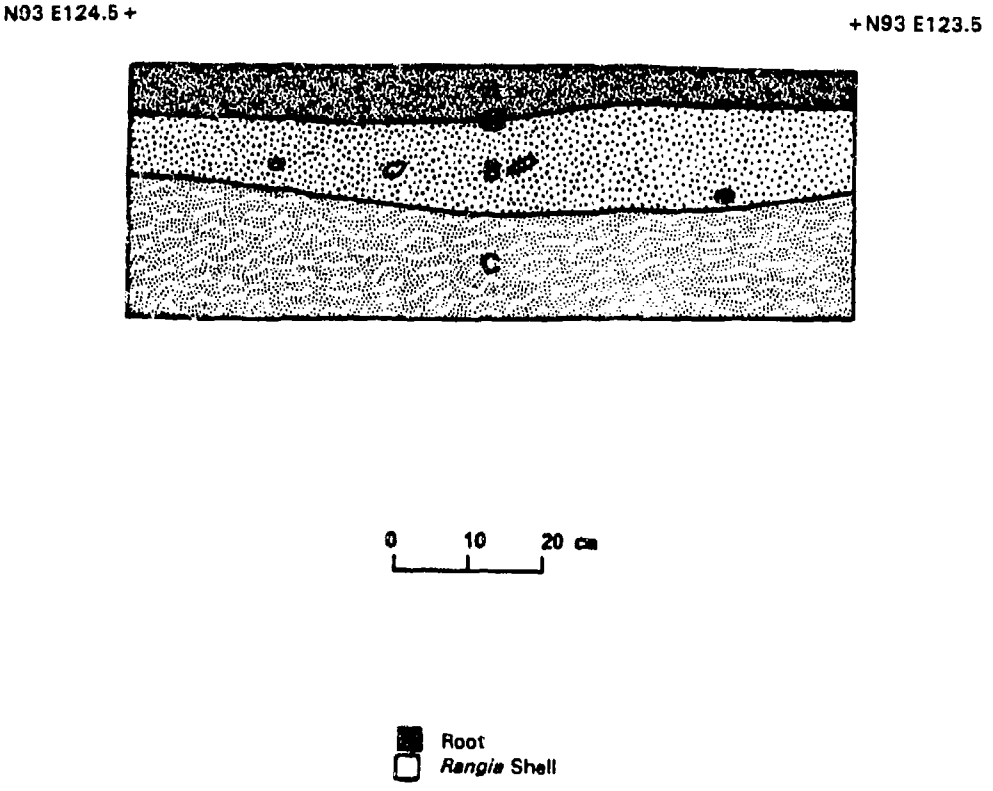
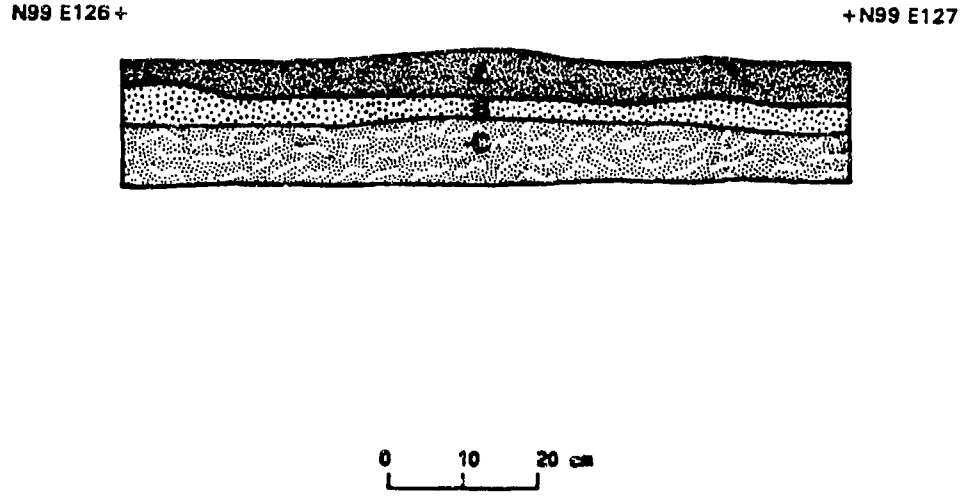


Figure 43. Planview of EU N94 E124.5, Level B1.



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay with 7.5YR 5/6 (strong brown) mottling

Figure 44. South profile, EU N94 E124.5.

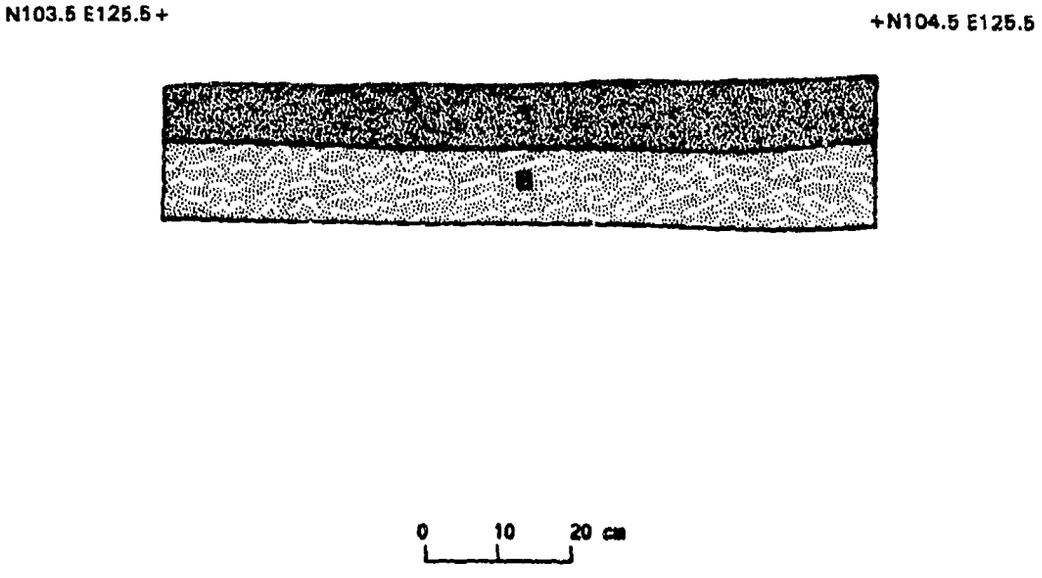


A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 4/2 (dark grayish brown) silty clay
C 10YR 5/3 (brown) silty clay

Figure 45. North profile, EU N99 E127.

Table 22. Artifacts from N99 E127.

	A1	B1	C1	Total
Aboriginal ceramics		1		1
Unidentified metal	1			1
Unidentified metal (wt. in g)	2.0			2.0
Bone (count)	1			1
Bone (wt. in g)	16.7			16.7
Daub (wt. in g)		1.5	0.1	1.6
Total	1	1		2



A 10YR 3/2 (very dark grayish brown) silty clayey loam
B 10YR 5/3 (brown) silty clay

Figure 46. West profile, EU N104.5 E126.5.

firmed that Stratum B was the primary culture-bearing stratum, and that this area was the northernmost extent of Locus A. The source of the magnetic anomaly at this locale is unknown.

Summary

Investigations at the Camino Site demonstrated that it consisted of two discrete loci. The larger of these two loci, Locus A, is presumed on the basis of site location and the presence of late-eighteenth-century material to be the remains of an *Isleño* habitation. In addition, a small, prehistoric aboriginal shell midden and an ephemeral, early-nineteenth-century component were present within Locus A. Locus B consisted of a tiny (4 sq m) *Rangia* shell lens and a few associated aboriginal sherds. No historic material was present within Locus B.

Unlike many of the other known *Isleño* sites, 16JE223 lacked a definable house mound. Although a slight elevation was present in the south-central portion of the site, this appears to mark the former location of a tree. This interpretation is supported by the dense and irregular network of root stains seen in both EU N82.5 E124 and EU N82.5 E123. However, it is not clear that a pit or depression, presumably the result of *bousillage* manufacture, was located at the site. One slight depression was noted to the northwest of Locus A. A shovel test within this depression did not reveal any artifacts, but this in and of itself does not necessarily discount the depression being cultural in origin. It should be noted, however, that this depression was somewhat farther from the densest concentration of artifacts seen at the site as compared to those found at 16JE197, 16JE214, 16JE215, and 16JE198 (Yakubik 1989:Figures 5, 9, 14, and 16).

Artifact yield was low throughout Locus A. The most common artifact type was pottery, and a plurality of the ceramics were creamware. European coarse earthenwares were also relatively plentiful, but faience was rare. Saintonge Green-Glazed Buff Earthenware and a number of slipwares also were noted. Pearlware ranged from very nice examples of eighteenth-century blue hand-painted pearlware to annular and shell-edged fragments that were clearly nineteenth-century in origin. Aboriginal ceramics were also relatively common, but the vast majority were undecorated. Disappointingly, none had the Maddox Engraved-like decoration found at 16JE216 (Yakubik 1989). Other artifacts included glass (primarily nondiagnostic), daub, metal buttons, beads, lead shot, lead sprue, pipe fragments, nails, gunflints, and flint debitage. Euro-American and Native American material were found both horizontally and vertically mixed throughout Locus A.

The distribution of historic materials provided little data about site activities. Relatively rich shovel tests were excavated at N85 E130 and near N83 E123, and Euro-American artifacts appeared to be concentrated in the area between ca. N82-N86 and E122-E132. However, the shovel test at N85 E125 was negative, demonstrating how uneven the distribution of artifacts was within this area. In addition, midden deposits were not identified in any of the shovel tests or excavation units in this vicinity.

The distribution of historic artifacts was extremely diffuse in the northern, southern, and western portions of Locus A. The light scatter of artifacts in the southernmost portion of Locus A suggests that the V-levee canal impacted relatively little of the site. Interestingly, few artifacts were present east of the concentration noted above, and rather than the gradual decrease seen to the north, west, and south, cultural activity appears to terminate abruptly between E132 and E135 on the N85 grid line.

The highest concentration of aboriginal ceramics found in Locus A was in EU N80 E121, in the southernmost portion of Locus A. The next highest frequency of aboriginal ceramics was found in EU N94 E124.5, directly to the east of the shell midden. Relatively

little aboriginal pottery was recovered from within the midden itself. Unfortunately, because of the mixing of Native American and Euro-American materials, it is impossible to determine if any of the ceramics derive from historic aboriginal activity. Similarly, while there was a tendency to recover more aboriginal ceramics in the lowest levels of the excavation units, no stratigraphically distinct prehistoric component was present. European artifacts were even collected from the *Rangia* midden Stratum D in EU N92 E120.5.

Faunal remains, with the exception of *Rangia*, were rare. This was true in both the water screened material and the flotation samples. Similarly, despite rigorous sampling, relatively little carbonized material was recovered during flotation.

It was hoped that the magnetometer would reveal the locations of features on the site. In fact, features were found in six of the units placed to intersect with magnetometer anomalies (N84.5 E131, N84.5 E132, N82.5 E125, N94 E124.5, N92 E120.5, N84.5 E117.5). Unfortunately, four of the six features uncovered were natural in origin, that is, the remains of decomposed tree roots and animal burrows. Other than the prehistoric *Rangia* midden present in EU N92 E120.5, only one possibly cultural feature was discovered at 16JE223. This was a small pit measuring approximately 20 x 15 cm observed in EU N825 E125. An aboriginal sherd, a piece of lead shot, a piece of glass, and a nail fragment were recovered from this feature. The regular outlines of the feature suggest that it was cultural in origin. However, it should be noted that this unit and the adjacent EU N82.5 E124 were both heavily disturbed by root and animal activity.

At the conclusion of Phase I field investigations, it was determined that the research potential of 16JE223 had been exhausted. Given the intensity of the effort, it was unlikely that further excavations would yield evidence of cultural features. Then too, while additional work might increase the artifact sample size, it seemed unlikely that this would enable the separation of the assemblages into individual components. Therefore, Phase II excavations were not recommended.

CHAPTER 10
ANALYSIS OF HISTORIC ARTIFACTS

Laboratory Methodology

Materials recovered from both the ESI and the LAS excavations at 16JE223 were washed, sorted, identified, and prepared for curation by Earth Search, Inc. Ceramics were classified utilizing the classification summarized below. Glass was described by color and manufacturing attributes when present. Nails were classified and dated as described below. Other artifacts were described and dated as possible. Plates 7 through 12 illustrate examples of the artifacts recovered during excavation.

Various cultural materials collected from the excavation units were weighed rather than counted. These included architectural debris, charcoal, gravel, and shell. Other artifacts, such as unidentifiable metal and bone, were both counted and weighed.

Ceramic Classification. The classification utilized for the ceramics is presented in greater detail by Yakubik (1990). The discussion below summarizes chronological information provided by the ceramic types recovered from 16JE223.

Prior to ca. 1780, the ceramic assemblage of southeastern Louisiana is essentially French colonial in character. That is, collections are dominated by French faience and continental European coarsewares. After 1780, British ceramics became widely available in the area. By 1880, there was little use of French ceramics. The occasional sherds of faience and continental European coarsewares that occur in early-nineteenth-century assemblages undoubtedly are the product of relic use.

No faience was collected at the Camino site, but twelve sherds of Marine Ware were recovered (Plate 7E). This majolica type has a grayish-green tin enamel, and sometimes exhibits dull blue hand-painted decoration. It has been reported from St. Augustine (Deagan 1987:95-96) and generally occurs in utilitarian forms. An apparently related tableware type has been recovered from contexts dating from 1700 to 1763 in St. Augustine, and rarely from occupations dating as late as 1780 in southeastern Louisiana (Yakubik 1990:291-292). This was the only tin-enameled ceramic recovered from 16JE223. Marine Ware sherds have also been collected from other *Isleño* sites in within the Barataria Unit of Jean Lafitte National Park and Preserve (Swanson 1995).

Continental European coarsewares were also recovered from the Camino site (Plate 7). One of the most common types found in southeastern Louisiana is Saintonge Green-Glazed Buff Earthenware (Yakubik 1990:220-222). The paste ranges in color from a buff to a pale pink or pale salmon, and the lead glaze is a bright apple green to dark green. Interior-glazed square-rim bowls are the most commonly found form. Saintonge Green-Glazed Buff Earthenware was one of the two most important wares produced at La Chapelle-des-Pots near Saintes, Charente Maritime, in Southwestern France during the eighteenth century (Barton 1981:16). It was imported to Louisiana at least as late as 1780 (Yakubik 1990:222), and is not uncommon in early-nineteenth-century contexts in this area.

The other important product of La Chapelle-des-Pots is Saintonge White-Slipped and Green-Glazed Pink Earthenware. The paste is very similar in texture and appearance to the buff type, but it is consistently pink to light red in color. A white slip is present under the apple green glaze. Brain (1979:58) notes that this is a marker type for the second quarter of the eighteenth century, and it is relatively plentiful in the earliest contexts from the Hermann-Grima House site (16OR45). Occasionally, however, a sherd occurs within a late-eighteenth-century collection, such as those from Orange Grove Plantation (16JE141), from the site of the

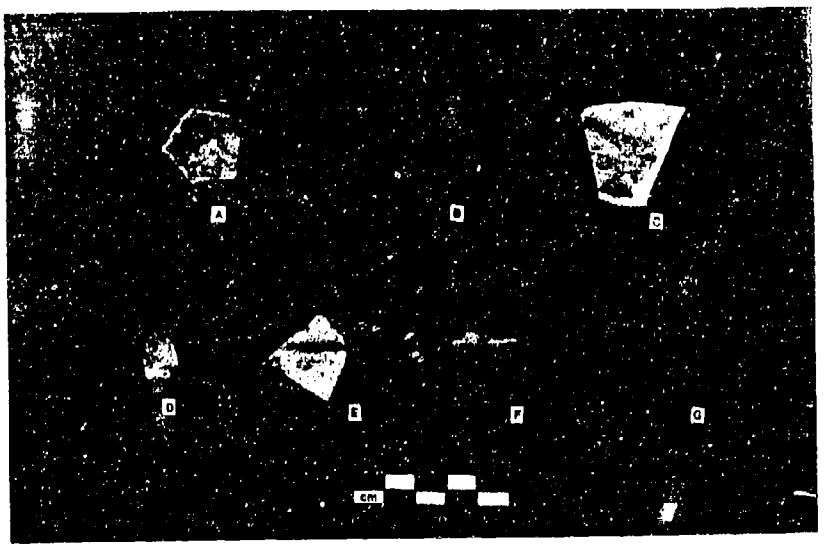


Plate 7. Coarse earthenwares from 16JE223. A) Flecked Lead-Glazed Redware, N83.8 E130, Feature 1/Level B3; B) Green-Glazed Redware, N86 E129, Level B2; C) Saintoge Green-Glazed Buff Earthenware, N92 E120.5, Level B1; D) Mottled Brown/Green-Glazed Redware, N86 E129, Level B1; E-F) Marine Ware, Spanish Olive Jar, N84.5 E131, Level B1; G) Brown-Glazed Redware, N83.8 E130, Level B2.

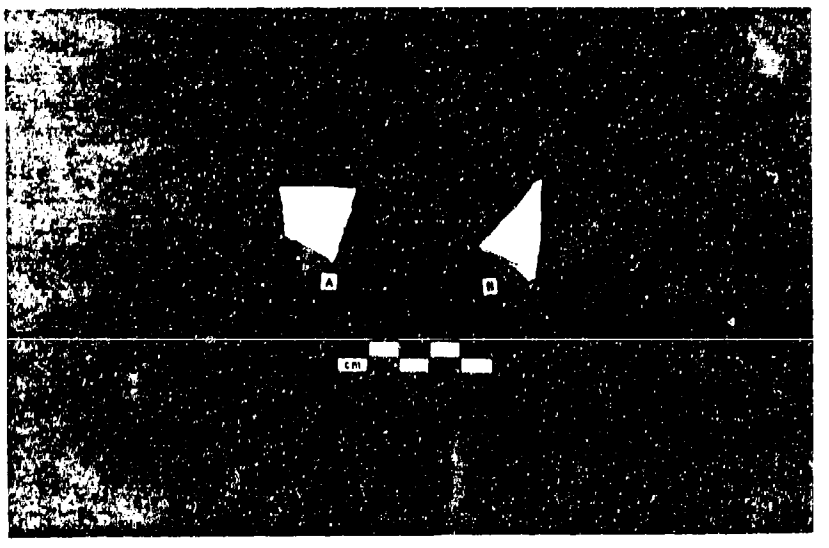


Plate 8. Creamwares with makers' marks from 16JE223. A) Shovel Test N75 E120; B) N83.8 E130, Level C1.

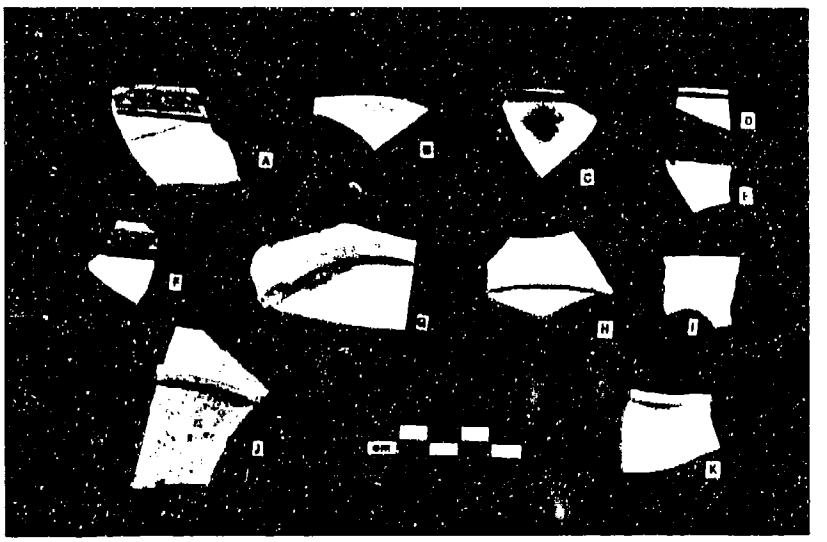


Plate 9. Selected pearlwares and creamwares from 16JE223. A) N84.5 E117.5, Level A2; B-C) N84.5 E117.5, Level B2; D-E) N83.8 E130, Level B1; F-H) N83.8 E130, Feature 1/Level B3; I-J) N85.1 E123, Level B1; K) N82.5 E124, Level B2.

Plate 10. Selected decorated pearlware from 16JE223. A) Shovel Test N105 E125; B) N87 E129, Level B1; C) N82.5 E124, Level B2; D) N85.1 E123, Level B2; E) N92 E120.5, Level D1.

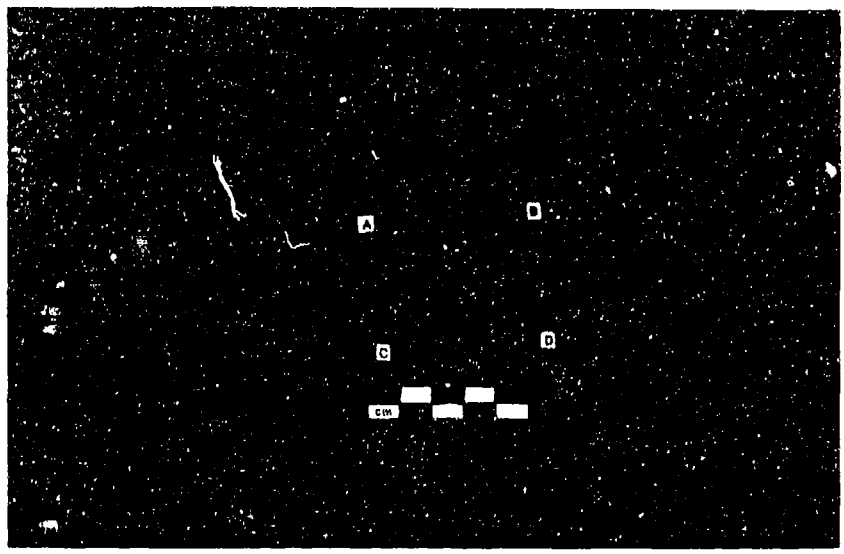


Plate 11. Selected buttons from 16JE223. A) N82.5 E124, Level B2; B) N86 E129, Level B1; C) N92 E120.5, Level B2; D) N84.5 E117.5, Level B3.

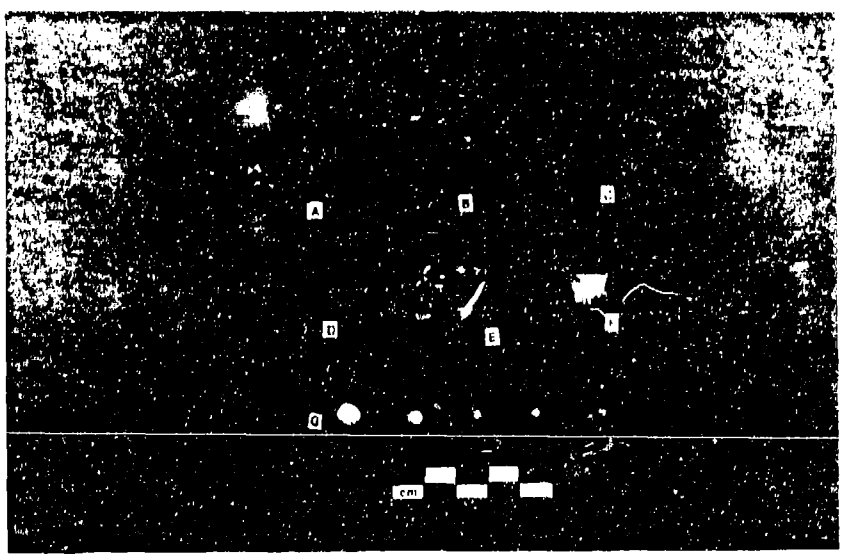


Plate 12. Selected gunflints, debitage, and lead shot from 16JE223. A) N85.1 E123, Level B2; B-D) N85.1 E123, Level B1; E-F) N86 E129, Level B2; G) N82.5 E125, Feature 2.

Beluche great house at the Chalmette Battlefield (16SB147), and from Destrehan Plantation (16SC18).

Green-Glazed Redware (Yakubik 1990:226-228) may have also been manufactured in France. The red paste has a coarser texture than the Saintonge Green-Glazed Buff Earthenware, and vessels are frequently unevenly fired. The glaze is dark-green to olive colored, and has a tendency to erode or patinate. Like Saintonge Green-Glazed Buff Earthenware, it is relatively common in eighteenth- and early-nineteenth-century contexts. This ware has been recovered recently within the Holy Cross Historic District in New Orleans (16OR130; Yakubik and Franks 1992) at 16SC61, which is a plantation site on the west bank of the Mississippi River in St. Charles Parish (Franks and Yakubik 1993), and at Whitney Plantation in St. John the Baptist Parish (Donald Hunter, personal communication 1991). The contexts dated to the terminal-eighteenth/early-nineteenth century at the first two of these sites.

Flecked Lead-Glazed Redware (Yakubik 1990:228-230) has a somewhat coarse red-colored earthenware paste with lustrous lead glaze. The glaze is marked by brown or black iron oxide flecks. Plain, lead-glazed redwares such as these were widely manufactured and consequently are not especially diagnostic. While it is assumed that most vessels of this type found in southeastern Louisiana were manufactured in France, some may be British or even American in origin. This common coarseware is found in eighteenth- through early-nineteenth-century contexts.

Brown-Glazed Redware (Yakubik 1990:233-224) was also recovered from the Camino site. The compact red-colored earthenware paste is covered with a yellowish brown to brown to dark reddish brown glaze that often exhibits a somewhat mottled appearance. This ware is usually present in small quantities at French Colonial sites, but it is also found in early-nineteenth-century contexts in southeastern Louisiana.

Mottled Green/Brown Lead-Glazed Redware (Yakubik 1990:237) is a relatively rare type in southeastern Louisiana, and to date has only been recovered in small quantities from the Hermann-Grima House site, from the Holy Cross Historic District (16OR130), from Destrehan Plantation, from Forstall Plantation (16JE129), and from both late-eighteenth- and early-nineteenth-century contexts at the Cabildo (16OR129). The clear lead glaze is dusted with copper oxide, crushed hematite, or manganese to produce brown and/or green mottling. Miller and Stone (1970:58) suggested that the type dates to the first half of the eighteenth century, and that it was probably manufactured in France.

Manganese-Glazed Earthenware (Yakubik 1990:253-254) was also recovered from the Camino site. Although manganese-glazed earthenwares were manufactured in Philadelphia and Massachusetts after ca. 1750 (Ramsey 1947:132), they were also produced in France. In the latter case, the manganese glaze utilized on brown faience was used to cover both the interiors and exteriors of vessels (Blanchette 1981:35). The paste of this type is compact and somewhat coarse-textured and generally red in color, although buff or brown examples are occasionally noted. The opaque glaze ranges from dark reddish brown to black.

Two Spanish colonial coarseware types were also collected at the Camino site. Several Spanish Olive Jar fragments were collected; these coarse-textured, globular earthenware vessels were utilized for storage. A number of Olive Jar sherds were found in the collections of the *Isleño* sites investigated by Yakubik (1989), but they are also common in French and Anglo-American contexts in Louisiana (Yakubik 1989:256-257). In addition, El Morro ware was recovered from 16JE223. This coarse, poorly wedged earthenware paste is tempered with sand. The vessel is generally lead glazed on the interiors only, and temper usually protrudes through the glaze. El Morro has been dated to the period 1550 to 1770, but it occurs as late as the early-nineteenth century in southeastern Louisiana (Yakubik 1990:230-231).

As noted above, widespread availability of British ceramics in southeastern Louisiana did not occur until the 1780s. The first type to be marketed in quantity in the area was creamware. Cream-colored earthenware was produced in England as early as the 1740s. The composition of the paste was the same as that of white salt-glazed stoneware, but it was fired at a lower temperature, colored with metal oxides, and covered with a lead glaze (Noel Hume 1972:350). In 1759, Josiah Wedgwood and Thomas Whieldon produced a cream-colored earthenware body covered with a fluid green glaze. The ware was not popular, and Wedgwood embarked upon further refinements of the cream-colored paste. By about 1762, he had developed creamware, which he called "creamcolour," and which is also known as "Queen's ware" (Noel Hume 1970:124, 1972:350). Creamware has a thin, refined cream-colored earthenware paste covered with a clear lead glaze which appears yellowish or greenish in vessel crevices. Importation to the American colonies began at least as early as the 1760s, although it and other British ceramics did not appear in quantity in Louisiana until the 1780s (Yakubik 1990). The ware continued in use through the first two decades of the nineteenth century. The popularity of creamware contributed to England's increasing control of the world ceramic market in the late-eighteenth century (Miller 1980).

Although decorated creamware was produced, creamware recovered from archeological contexts is usually plain (Plates 8 and 9). Creamware occasionally received annular decoration, which consists of multiple horizontal bands of multi-colored slips around the vessel often in conjunction with engine-turned decoration. Annular decoration is found on creamware after ca. 1785 (Noel Hume 1970:131).

Variants of annular decoration include mocha and finger-painted decoration, both of which also include bands of multi-colored slips. The latter consists of colored slips which are swirled together to give a marbled effect. Mocha decoration is so named because it resembles the dendritic patterns of quartz from Mocha on the Red Sea. The brown, fern-like pattern is produced by a tobacco infusion in stale urine and turpentine which is applied to the colored-slipped body (Van Rensselaer 1966:337). Both are found on creamware from the 1790s to the early-nineteenth century.

Wedgwood developed pearlware from creamware by 1779. Noel Hume (1969:390; 1970:128) notes that although the pearlware paste contains more flint than that of creamware, the cream-colored earthenware pastes of the two are virtually identical (Sussman 1977:105). However, the lead glaze of pearlware is tinted with cobalt oxide. The cobalt has the effect of whitening the appearance of the cream-colored earthenware body of pearlware.

Unlike creamware, pearlware was usually decorated (Plates 9 and 10). One of the most common forms of decoration on pearlware is shell-edging. This consists of a molded, shell-like rim that is decorated with either blue or green hand-painting. While Noel Hume (1970:131) states that eighteenth-century examples tend to be finely painted with individual brush strokes evident on the rim, and that later pieces are less well executed, Sussman (1977:108) did not find these criteria helpful for dating. Instead, she suggests that eighteenth-century traits include a flat rim which may have an upturned brim and which have sharply defined edges. Bases are either flat, countersunk, or have a rounded ring foot. Nineteenth-century examples are more similar in appearance to whiteware (below). Traits include concave or S-shaped rims with rounded edges and wedge-shaped or double-ridged foot rings (Sussman 1977:109). In addition, nineteenth-century pearlware sometimes exhibits a variety of fronds, garlands, and floral devices molded on the edge and painted in blue or green (Sussman 1977). Miller (personal communication to Dawdy, 1994) has further refined the chronology of shell-edged rim patterns.

Transfer-printing is also frequently found on pearlware. The technique of transfer-printing was developed in the mid-eighteenth century. It involved engraving a plate with the

desired pattern and printing it on tissue paper. The paper was laid on the vessel, transferring the pattern to the piece. Blue transfer-printed pearlware was first produced in quantity in the 1790s. Blue was by far the most common color utilized in transfer-printing because cobalt is the most stable of the coloring oxides. The perfection of printing colors such as red, brown, and purple underglaze was not achieved until the late 1820s (Majewski and O'Brien 1987:119, 139).

The decoration on pearlware was often hand-painted underglaze, either in blue (often oriental motifs, and less frequently in floral patterns) or in polychrome floral and geometric patterns. While blue hand-painted pearlware was produced from the inception of the ware, polychrome hand-painting on pearlware did not occur until ca. 1795 (Noel Hume 1970:129).

White-colored earthenware was the result of the introduction of increasing amounts of cobalt into the cream-colored ceramic paste during the early-nineteenth century. The bodies of these ceramic vessels became thicker and coarser over time; the net effect of this whitening of the paste was a reduction in its plasticity. The result of these changes distinguishes white-colored earthenware from cream-colored earthenware. During the first quarter and into the second quarter of the nineteenth century, the white-colored earthenware body frequently was covered with a cobalt tinted glaze typical of pearlware. Ultimately, the use of cobalt additives in the glaze was reduced, and by the end of the first quarter of the nineteenth century, a white-colored earthenware paste with a clear glaze was being produced. This type commonly is referred to as whiteware.

As was the case with pearlware, whiteware was usually decorated. Decoration found on transitional white-colored earthenware includes techniques found on pearlware such as annular banding, finger-painting, shell-edging, polychrome hand-painting, blue hand-painting, and transfer-printing. The transfer-print palette was expanded ca. 1830 to include colors such as red, green, brown, and purple. Spatter (or sometimes called sponged) decoration also is found. Introduced in the 1820s, the earliest spatter decoration was produced by spattering paint from a full brush on the vessel using a stencil. Reserved areas were often hand-painted (Ray 1974:211-212; Majewski and O'Brien 1987:161-162).

Transfer-printing in a variety of colors is the most common decorative treatment found on whiteware. In addition, a variation on transfer-printing, flow blue, is often recovered. This decoration was produced by the deliberate introduction of a chlorinated vapor into the kiln, which blurred the transfer-print. Patterns on later examples tend to be more distinct than those on earlier pieces. Introduced ca. 1825, flow blue was utilized on whiteware and ironstone (below) into the early-twentieth century. Flow purple and flow brown were also produced in lesser quantities (Ray 1974:69).

Classification of Glass. Prior to the nineteenth century, the majority of glassware was hand-blown. Characteristics of hand-blown glass include the absence of mold seams and an asymmetrical vessel shape. Alternately, bottles were blown into a one piece dip-mold to form the vessel body, while the neck and shoulders were hand finished. This technique came into common use during the mid-eighteenth century and continued to be utilized until the mid-nineteenth century.

Unfortunately, with the exception of a single bottle neck fragment with an applied string, none of the glass from the Camino site exhibited diagnostic manufacturing attributes. The majority of the glass was olive-colored and may have been fragments of wine bottles. In addition, a few olive case bottle fragments were collected. In addition, two sherds of "black" glass were collected. "Black" glass was utilized primarily for liquor bottles, was common throughout the eighteenth century and until the late-nineteenth century. The glass is actually

dark green, but the thickness of the vessel gives the impression that the glass is opaque black in reflected light (Jones 1971:11).

Classification of Nails. Generally, nails are only broadly datable. Prior to 1790, all nails were hand wrought. A variety of different wrought nails were manufactured. These can be further subdivided by the shape of their heads (i.e., rose-headed, t-headed, l-headed, and headless). Most of the nails from the Camino site were too badly corroded or too fragmentary to be identified, but the vast majority that could be identified were wrought and many of these were rose headed.

Between 1790 and the 1830s, early machine cut square nails came into general use. Machine cut square nails with wrought heads were manufactured between about 1790 and 1815, after which square cut nails with machine made heads appeared. This type, which continued to be manufactured until the 1830s, had somewhat irregular heads and a "wasted," rounded shank under the head. Square cut nails with machined heads that lacked the "wasting" characteristic of the above appeared ca. 1820 (Nelson 1963; Noel Hume 1970:252-254).

Additional nail attributes which provide chronological information include cut marks and the direction of the metal fibers in the nail shaft. Prior to 1820, the cutting of the nail shafts produced burrs on diagonal corners of the nail shaft. After this date, the burrs appear on adjacent nail corners. In addition, prior to ca. 1830, the metal fibers of the nail run horizontally to the shaft. After ca. 1830, they run vertically to the shaft.

Two cut nails were collected at 16JE223. Both of these were too badly corroded to observe cut marks or the orientation of the metal fibers.

Buttons. Four buttons and one button fragment were collected from 16JE223 (Plate 11). Two of the buttons were brass, one was pewter, and the final button and the fragment were made of a copper alloy. Pewter was a frequently utilized material for buttons in the eighteenth century because of its low melting point and the ease with which it was cast (Hinks 1988:52). Pewter buttons cast in one piece with the eye were manufactured from the mid-eighteenth century into the nineteenth century (Olsen 1963:552-553). One button from EU N84.5 E117.5 was produced in this manner. It had a domed face, and it measured 1.12 cm in diameter (Plate 11D).

Both copper and brass were used for buttons in the eighteenth century, but the latter was more common. A very common manufacturing technique in the late-eighteenth century was to solder a wire shank to the back of a flat brass or copper disc (Hinks 1988:57, 59). The two brass buttons and the copper alloy button from 16JE223 were produced in this manner. One brass button measured 2.29 cm in diameter, and the other measured 2.23 cm in diameter (Plate 11A and C). The copper alloy button measured 2.10 cm in diameter (Figure 11B). All were undecorated, although such buttons were frequently engraved or gilded. An example of the latter was recovered from the *Isleño* site 16JE214.

The button fragment also appears to have a soldered wire eye. It measures approximately 0.7 cm in diameter, is hexagonal in shape, and has a slightly concave face. It is similar to Hink's (1988:129) button Type 7A1 s1, which he identifies as a "sleeve button with a faceted clear glass setting," and dates to the period 1720-1800. The example from 16JE223 looks like it also may have formerly held a "dressmaker's jewel."

Pipes. All pipe fragments recovered from 16JE223 were made of kaolin and, with the exception of one pipebowl fragment, none were decorated or marked. The single exception, from EU N85.1 E123, has a bird that looks like a heron or an egret cast on the bowl. Frond-

like devices may have been utilized to camouflage the mold seam on this pipe (see Humphrey 1969:23), but this is uncertain because of the small size of the fragment.

Beads. Four identical red mandrel wound beads were collected from 16JE223. Two were recovered from EU N87 E129, one was from EU N84.5 E131, and one was found on the surface. These varied in length from 6.8 to 7.7 mm and in width from 6.5 to 7.2 mm. The apertures of the beads range from 1.7 to 2.4 mm in diameter. No other beads were found at the site. The beads are not temporally diagnostic, nor can their place of origin be determined.

Lead Shot. Ninety-one pieces of lead shot were collected from 16JE223. Although it is possible that the shot derived from recent hunting in the site vicinity, it should be noted that no shot was recovered at the nearby 16JE218 despite identical excavation, water screening, and flotation methodologies. Then too, lead shot was recovered at the *Isleño* sites investigated by Yakubik (1989).

Figure 47 presents a bar graph of the shot diameter frequencies. As shown in this figure, the vast majority of the shot was less than 3.4 mm in diameter, and most of the shot is less than 3.0 mm diameter. This indicates that primarily small-sized game was being hunted. Shot in the 2.0 to 2.4 mm range corresponds to modern-day size 8 and 9 shot, which is recommended for Jack snipe, quail, rail, sora, and woodcock. Size 7 (2.5 mm diameter) and 8 shot is suggested for doves and pigeons. Shot ranging from 2.5 mm to 3.0 (Sizes 5-7) is generally used for ducks, grouse, pheasants, rabbits and squirrels. Shot in the 3.8 to 4.6 mm diameter (Size 1,2, or BB) range is used for turkey. Buckshot, which is used for large game such deer, is 6.6 mm and larger (Camp 1948:630, 745). The variability in the size of the shot, as well as the presence of lead sprue on the site suggests that the site inhabitants were manufacturing their own ammunition.

Gunflints and Lithic Debitage. Black flints of a prismatic shape are generally attributed to English manufacture, while blond or honey colored with rounded backs are said to be French, although Miller and Keeler (1986) found exceptions to this rule. Noel Hume (1972:220) states that the latter were considered superior to the former and were more plentiful on both British and American sites up through the Revolutionary War. However, six of the seven gunflints found at the Camino site were made of black flint.

One tiny corner of a broken, black flint was recovered from EU N87 E129. The fragment was so small that little could be determined about its manufacture. By contrast, one prismatic black flint from EU N84.5 E117.5 was in such pristine condition that it likely was lost before it was utilized. Another from a shovel test at N80 E115 was also in fairly good condition, but the "black" chert was of poor quality and almost variegated in appearance. By contrast, the black gunflint from EU N84.5 E132 was so heavily retouched that its original shape could not be determined.

Three flints were recovered from EU N85.1 E123. One of these was the single honey-colored flint found at the site. It was heavily retouched, but it appeared to have the conventional rounded back of the French-type flint (Plate 12A). One of the other flints was broken, but it also had been retouched (Plate 12C). The final flint was actually a gunspall, and was in fairly good condition (Plate 12D).

Thirteen fragments of lithic debitage were collected, at least seven of these were honey-colored or black flint. The remainder appeared to be chert (Plate 12 E-F). Interestingly, a unifacially retouched chert flake was recovered from EU N84.5 E132 (Figure 48). It had a maximum width of 3.2 cm, a maximum length of 3.0 cm, and it was produced from a spall. Although initially it was believed to be aboriginal in origin, it is very similar in appearance to

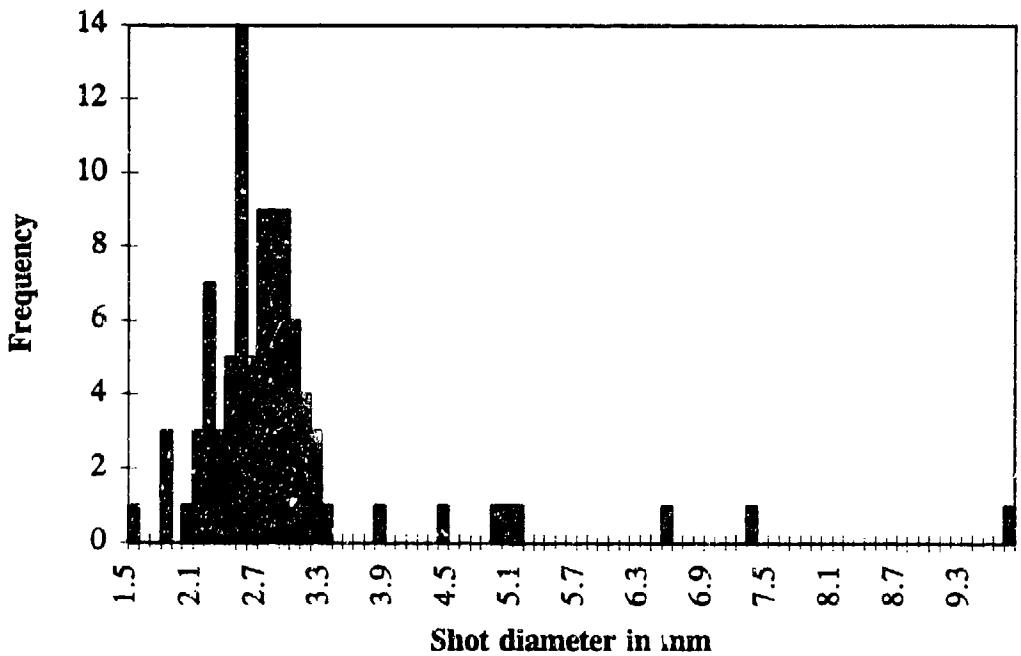


Figure 47. Bar graph showing shot diameter frequencies.

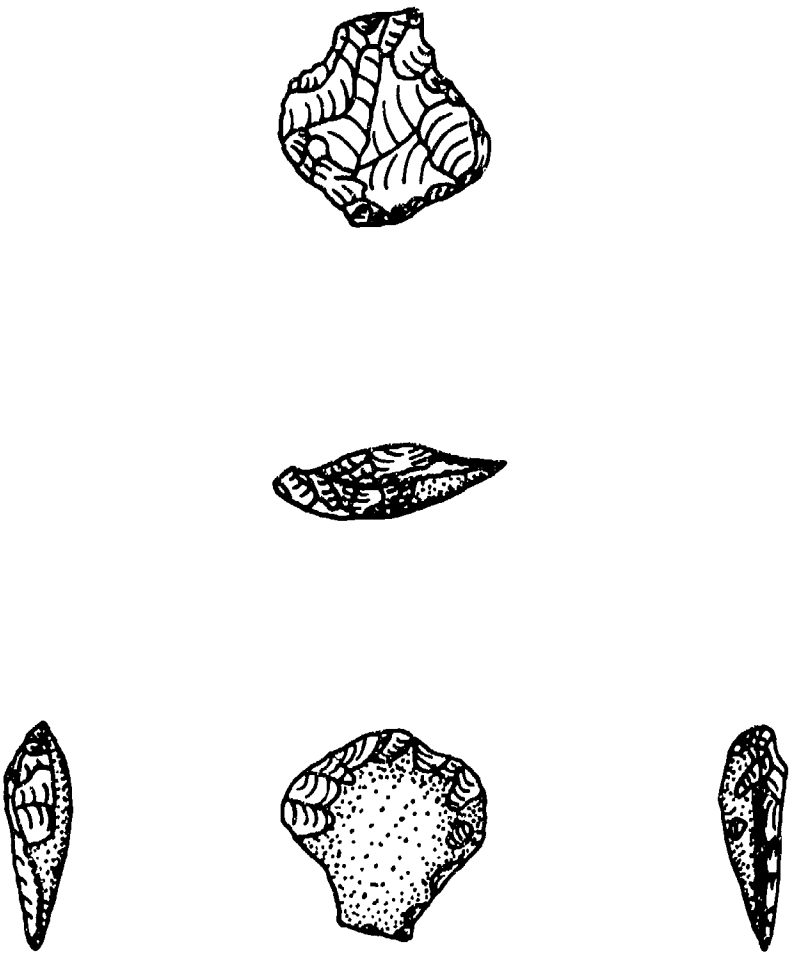


Figure 48. Unifacially worked chert flake from 16JE223 (Scale 1:1). N84.5 E132, Feature 1/Level B4.

a locally produced gunspall found at the St. John's site (18ST1-23), St. Mary's City, Maryland (Miller and Keeler 1986:Figure 2I).

Miscellaneous Metal Artifacts. A key and a spade were recovered by amateur investigators prior to the present effort. Both appear to date to the nineteenth century or later.

The key has a shank which measures 10 cm in length. The bow is broken, but it appears to have been oval-shaped and measured 2 cm in length. The web measures ? x 2 cm, and forms a solid rectangle with one concave surface. It is unlike eighteenth-century plate stock lock keys presented by Noel Hume (1972:Figure 77b), but very similar in appearance to plate lock and iron door keys dating from the mid-nineteenth century (Association for Preservation Technology 1980:58, 140) to the late-nineteenth century (Schroeder 1977:369).

The spade is forged, and the blade measures 26 cm in length. The maximum width of the blade at its top is 26 cm, it narrows to 17 cm at its base. The shank is cylindrical and overlaps slightly at the back. It is 12 cm long and has a maximum diameter of 5 cm. By contrast, Noel Hume (1972:275) notes that eighteenth-century spades had shanks which consisted of two concave leaves. The handles were secured by nails through both the shank and the blade. There is no evidence that nails were driven through the blade of the spade from 16JE223, however. Finally, the fact that the spade is in such good condition argues against it dating to the eighteenth century.

Mean Ceramic Dating

Mean ceramic dating is essentially a seriation technique, since it is based on the assumption that ceramic types exhibit a unimodal distribution through time (South 1972:73-74). Using temporal information provided by Noel Hume (1970), South (1972, 1977:201-236) presented manufacturing date ranges for 78 ceramic types. South assumed the midpoint of manufacture for each type was its popularity peak, and assigned this as the "median date." The mean ceramic date (Y) is then calculated by the formula:

$$Y = \frac{\sum_{i=1}^{n} X_i * f_i}{\sum_{i=1}^{n} f_i}$$

where X_i is the median manufacture date; f_i is the frequency; and n is the total number of ceramics used in the calculation.

South (1972) developed this technique for use on eighteenth-century Anglo-American sites, but he encouraged expansion of the concept to include other data sets. Later he presented date ranges, median dates, and index dates (adjustments to the median dates) for majolica types based on Goggin's (1968) research (South 1977:238-247). Other investigators have modified the formula for use in nineteenth-century contexts (McCloskey 1979; Lofstrom et al. 1982; Yakubik 1990).

Because mean ceramic dating was developed for use on Anglo-American sites, the application of the technique on Louisiana colonial period assemblages is problematic. One obvious difficulty is that if types utilized in the formula that predate creamware rarely occur (none were found at the Camino site), mean dates will usually be no earlier than 1791, the median date for creamware. Lamb and Beavers (1983:51-56) have suggested median dates for several tin-enameled and coarse earthenware types, but there are several problems with their use. First, Lamb and Beavers derive their median dates from "dates of possible importation to

North America" on the basis of the occurrence of these types at only four sites outside of Louisiana (1983:52). In addition to this being a limited examination of the occurrence of these types, it has not been demonstrated that the mid-point of importation is necessarily the modal date of popularity. Conversely, the mid-point of manufacture *does* appear to reflect the peak of popularity of ceramic types utilized in South's (1972) original formula by the fact that "it works" (Deetz 1977:18). Finally, Lamb and Beavers applied their modified formula to undated contexts, so there is no way to judge the validity of their results.

The earliest type in the Camino collection that is utilized in most applications of the formula is creamware, and thus, the earliest mean ceramic date that could result would be after the *Foblación* is known to have been abandoned by all but a few settlers. Therefore, an arbitrary median date of 1750 was utilized for coarsewares recovered from the site. Given that this "median date" is not necessarily the modal date of popularity, the resulting mean ceramic dates should be viewed only as indices of the relative proportions of Anglo-American and continental European ceramics. They should not be regarded as reliable mid-point dates of occupation.

Mean ceramic dates were calculated for the site as a whole, for Stratum A, and for Stratum B, both with and without coarsewares. Table 23 demonstrates that the MCDs calculated without coarsewares are clearly unrealistic. Even those which utilized coarsewares seem somewhat too late for this briefly occupied site, but this is probably the result of skewing caused by early-nineteenth-century occupation at the site. In both cases, Stratum A dated slightly later than Stratum B. Interestingly, while the MCD calculated without coarsewares for the entire site fell between the dates for the two strata, the date calculated with coarsewares is somewhat later than both. This reflects the fact that most of the material recovered from shovel tests and surface collections consisted of Anglo-American types rather than continental European coarsewares

Mean ceramic dates were also calculated for each unit in order to investigate whether deposits at the site were horizontally stratified (Table 24). Disappointingly, no concentration of either early or late dates was revealed. In fact, adjacent units in some cases showed widely disparate dates. EU N84.5 E131 yielded a date of 1784.7, while the bracketing EU N83.8 E130 and N84.5 E132 yielded dates of 1780.0 and 1778.2, respectively. An even greater difference was found between the dates from EU N86 E129 and N87 E129, which respectively were 1780.1 and 1791.9.

The mean ceramic date for the Camino site was then compared to those from five[1] recorded *Isleño* sites within Jean Lafitte National Historical Park and Preserve. MCDs were calculated for these latter sites by Yakubik (1989:Table 15), but an additional series of dates were computed utilizing coarsewares. Also, the MCDs based on minimum vessel estimates (see below) were also tallied for all six sites. It should be noted that while the small sample sizes of these collections would make MCDs calculated for the purpose of estimating the mid-point date of occupation suspect, our purpose here is to examine the relative importance of Anglo-American and continental European ceramic types.

The Camino site mean ceramic date computed without coarsewares was the second to the latest of the six sites (Table 25). Only 16JE197 is later, which is documented as having been occupied until 1807. 16JE223 also yielded a later date than 16JE214, which is know to have been occupied at least until 1802. This effectively demonstrates the relatively late character of the Camino site assemblage: it entirely lacked faience and contained a comparatively high proportion of pearlware. However, the coarsewares found at 16JE223 compensate for

[1] 16JE199 was not utilized because it only yielded a single sherd of creamware.

Table 23. Mean Ceramic Dates for Strata A and B and for the Site as a Whole.

	MCD (with coarsewares)	n	MCD (without coarsewares)	n
Stratum A	1783.49	61	1795.40	45
Stratum B	1781.31	328	1793.52	236
Entire Site	1785.03	470	1794.38	371

Table 24. Mean Ceramic Dates for Individual Units, 16JE223.

	MCD	n
N80 E121	1770.5	10
N82.5 E124	1794.6	31
N82.5 E125	1791.0	3
N83.8 E130	1780.0	58
N84.5 E117.5	1789.8	64
N84.5 E131	1784.7	63
N84.5 E132	1778.2	49
N85.1 E123	1777.1	25
N86 E129	1780.1	55
N87 E129	1791.9	22
N92 E120.5	1769.6	7
N94 E124.5	1780.8	4

Table 25. Mean Ceramic Dates for Canary Islander Sites.

	MCD	n	MCD (with coarsewares)	n	MNV MCD	n
16JE197	1796.1	80	1788.6	97	1778.2	21
16JE198	1757.0	8	1752.4	17	1753.7	11
16JE214	1792.0	42	1788.9	44	1779.9	11
16JE215	1790.1	24	1779.9	32	1772.3	8
16JE216	1783.6	110	1771.1	174	1763.3	29
16JE223	1794.4	371	1785.0	470	1782.8	33

the absence of faience at the site; when the MCDs are recalculated with coarse earthenwares, both 16JE197 and 16JE214 provide later dates than the Camino site. Interestingly, the ordering of the former two is reversed, and their dates are virtually identical. The ordering of the remaining three sites is unchanged, however.

Calculation of the mean ceramic dates from the minimum vessel (MNV) estimates yielded yet another ordering for 16JE223, 16JE197, and 16JE214. In this case, the Camino site collection is the latest, and 16JE214 is next, followed by 16JE197. The ordering of the earliest three sites is again unchanged (Table 25). This illustrates that while a relatively rich coarseware collection was found at 16JE223, these represent a smaller proportion of actual vessels than do the Anglo-American types. It also accentuates the comparatively large amount of pearlware vessels in the assemblage.

The relative importance of pearlware within the Camino site strongly supports the premise of an independent, early-nineteenth-century occupation at the site. As noted above, at least four green shell-edged soup-plates (Plate 10B-E), an annular pearlware bowl (Plate 10A), and a whiteware vessel in the assemblage all date to the early-nineteenth century. The site clearly was not continuously occupied during the period ca. 1780-1820; there is simply not enough material at the site to represent 40-plus years of uninterrupted habitation.

Unfortunately, the presence of two separate components at the site creates analytic problems. Clearly, the later ceramics were left by the early-nineteenth-century occupants, but how much of the earlier pottery did they also discard? If the existence of the *Población* was not known, the paucity of material at the site might argue for utilizing the latest material as a *terminus post quem* for a single occupation which had a heavy reliance on relic types. Even allowing for an *Isleño* component at the site, it is not inconceivable that an early-nineteenth-century habitation in this locale may have deposited all of the pearlware and most of the creamware. Then too, artifacts that are not chronologically diagnostic, such as buttons and gunflints, cannot be sorted between the two components.

Therefore, for lack of any better solution, all historic material collected from the site was utilized in the following analyses. While it would be possible to eliminate certain items that cannot date to the *Isleño* occupation (e.g., the late ceramics, the key, and the spade), undoubtedly other artifacts which derive from the nineteenth-century component would be overlooked because they are not chronologically diagnostic, or because they are relic items used by the later inhabitants. Rather than eliminate a small proportion of the items, none have been excluded. Thus, the following conclusions are necessarily tentative, and limitations in the data are explicated whenever possible.

Artifact Density

Artifact density at the Camino site was light, but this is not surprising given that most of the living sites in the *Isleño* community were only occupied for a short period of time. Therefore, the amounts of a variety of artifact types found at 16JE223 were compared to the six *Isleño* sites investigated by Yakubik (1989) in Jean Laffite National Park and Preserve. To do this, the shovel tests and hand units were combined to calculate the total square meters excavated at each site.[2] The numbers (or, in some cases, weight in grams) of various artifact groups were divided by the total square meters excavated (Table 26). While we acknowledge that sampling error may have produced some of the results observed below, the Jean Lafitte collections provide the largest samples available for comparison to the Camino material.

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[2] Because depths of deposit were similar on all of the sites, the cubic meters of earth removed should have been roughly proportional.

Table 26. Comparison of Amounts of Artifacts Per Excavated Square Meter of Soil.

Site	Shovel Tests	EUs	Total sq m Excavated	Bone		Daub		Brick	
				wt. in g	per sq m	wt. in g	per sq m	wt. in g	per sq m
16JE197 (1)	46	2	6.18	130.9	21.18	324.7	52.53	2237	361.87
16JE198 (4)	28	1	3.55	46.5	13.12	151.4	42.70	4112.1	1159.82
16JE199 (5)	26	1	3.36	0.35	0.10	19.3	5.74	262.7	78.10
16JE214 (2)	28	2	4.55	32.7	7.19	873.7	192.21	941.2	207.06
16JE215 (3)	14	1	2.27	0	0.00	14.4	6.34	126.1	55.48
16JE216 (6)	48	2	6.36	159.7	25.10	864.2	135.80	5735.1	901.23
16JE223	43	14	17.91	104.3	5.82	686.3	38.32	1353.8	75.59

Table 26. Comparison of Amounts of Artifacts Per Excavated Square Meter of Soil.

Site	Nails		Weapons Category		Lithics within Weapons Category		Smoking Pipe Fragments		Total Ceramic Vessels	
	count	per sq m	count	per sq m	count	per sq m	count	per sq m	count	per sq m
16JE197 (1)	58	9.38	8	1.29	7	1.13	6	0.97	22	3.56
16JE198 (4)	9	2.54	0	0.00	0	0.00	2	0.56	12	3.38
16JE199 (5)	1	0.30	0	0.00	0	0.00	0	0.00	1	0.30
16JE214 (2)	53	11.66	2	0.44	0	0.00	2	0.44	12	2.64
16JE215 (3)	9	3.96	0	0.00	0	0.00	2	0.88	8	3.52
16JE216 (6)	126	19.80	55	8.64	15	2.36	9	1.41	29	4.56
16JE223	93	5.19	127	7.09	31	1.73	11	0.61	33	1.84

Table 26. Comparison of Amounts of Artifacts Per Excavated Square Meter of Soil.

Site	Total Glass Vessels		Aboriginal Sherds		Total Items	
	count	per sq m	count	per sq m	count	per sq m
16JE197 (1)	3	0.49	1	0.16	108	17.47
16JE198 (4)	2	0.56	4	1.13	25	7.05
16JE199 (5)	0	0.00	1	0.30	3	0.89
16JE214 (2)	4	0.88	0	0.00	75	16.50
16JE215 (3)	4	1.76	0	0.00	23	10.12
16JE216 (6)	7	1.10	57	8.96	228	35.83
16JE223	5	0.28	156	8.71	284	15.86

Table 26 shows that architectural debris was relatively scarce at 16JE223. Daub was most plentiful at 16JE214, but it should be noted that the two excavation units opened at this site uncovered the only architectural feature found to date within the *Población*. Nonetheless, a relatively large amount of daub was also found at 16JE216. The quantities of daub found at 16JE197, 16JE198, and 16JE223 were not dissimilar, but of the three, the Camino site yielded the least. In addition, very little brick was recovered from 16JE223; only 16JE215 yielded less. While the amounts of brick found at the Camino site were roughly equal to that found at 16JE199, both of these sites contained far less brick than the other four sites (Table 26).

Nails were also relatively rare at the Camino site (Table 26). While 16JE198, 16JE199, and 16JE215 all produced fewer nails than 16JE223, both a metal detector and a magnetometer were employed at the Camino site, and excavations were placed at positive magnetic readings. Thus, one would expect a greater number of nails to have been recovered from the Camino site, even if only roughly equal quantities were actually present. The relative paucity of nails, brick, and daub all suggest that architectural improvements at the site were minimal even in comparison to other *Isleño* sites.

The minimum numbers of both ceramic and glass vessels (see below) found at each of the seven sites were compared. In both cases, only 16JE199, which was all but devoid of artifacts (Yakubik 1989:78-81), yielded fewer vessels per square meter of area excavated (Table 26). Similarly, only 16JE199 and 16JE215 had less bone. This was particularly surprising, since there were at least two distinct historic occupations at the Camino site. The relative lack of domestic debris and faunal remains may suggest that this was not in fact a habitation area, and that the actual living area associated with 16JE223 was elsewhere.

By contrast, the amount of artifacts related to weapons such as gunflints, flint flakes, and lead shot from the Camino site was second only to 16JE216 (note that the modern bullets recovered from the site vicinity were not included). When only lithic materials were considered, again the quantity from the Camino site was the next to the highest. This indicates that hunting was likely an important activity at the site. Combined with the relative lack of domestic debris, this suggests that 16JE223 may have functioned as a hunting camp. If this were the case, the relative paucity of bone at the site would indicate that game was likely cleaned and dressed elsewhere. It should be noted that since two historic components are present at 16JE223, either one or both may have served as a locus for hunting activities.

16JE197, 16JE215, and 16JE216 all yielded more smoking pipe fragments than did the Camino site (Table 26). The presence of a relatively high quantity of pipe fragments might have supported the suggestion that 16JE223 served as a men's activity area, but the data are ambiguous. If the site was utilized infrequently and/or briefly, it would not be surprising to find more pipes on continuously (albeit ephemeral) occupied habitation sites.

The amounts of aboriginal ceramics were also compared for the seven sites. Table 26 demonstrates that both 16JE223 and 16JE216 had exceptionally high quantities of Native ceramics, and that the amount found at the latter slightly surpassed the former. However, it should be noted that the aboriginal pottery at the six previously investigated sites was all associated with the *Isleño* occupations, while a separate prehistoric component was present at the Camino site. As noted in Chapter 9, if both prehistoric and historic aboriginal ceramics are present at 16JE223, it is not possible to separate them for analytic purposes.

Finally, the total number of items[3] from the seven sites was compared (Table 26). 16JE216 yielded more than twice the amount of material of any of the other sites. 16JE197

[3] minimum numbers estimates; aboriginal material was excluded in all cases

and 16JE214 were a distant second and third, respectively, and the Camino site collection was the fourth largest. It should be noted that although fewer items were found at the Camino site than at 16JE197 and 16JE214, the quantities from the three sites were not dissimilar. By contrast, much less material was recovered from 16JE215, 16JE198, and 16JE199.

However, it must be remembered that while only shovel testing was employed at the six sites within Jean Lafitte National Historical Park and Preserve, both a metal detector and a magnetometer were utilized at the Camino site to identify metal concentrations and features. Given the intensity of the investigations at 16JE223 as compared to the other sites, the collection seems woefully small. In addition, it appears that two historic occupations are represented in the Camino collection, yet the assemblage is still comparatively smaller than three out of the six other sites, all of which appear to represent only one component. Because both 16JE197 and 16JE214 are documented as having been occupied for ca. 25 years, the fact that relatively less material was recovered from the Camino site demonstrates that it is unlikely that it was occupied for the 40-plus years necessary to account for the ceramic types present in the assemblage. Thus, the artifact density at 16JE223 supports the suggestion that two distinct components were present at the site, and that both occupations were likely brief and/or may not have been domestic in nature.

Minimum Vessel Estimates

In addition to the classification of ceramics presented above, minimum numbers of vessels at the Camino site were estimated. One advantage to this technique is that it provides a more realistic idea of the number of whole dishes or vessels actually represented in an assemblage. A single plate may break into dozens of sherds, but those sherds still only represent one item. Similarly, utilizing minimum vessel estimates rather than sherd counts serves to equalize categories somewhat when undertaking functional analyses (below). Functional classifications often are over-weighted toward "kitchen" artifacts, which most ceramics and glass represent.

In addition, minimum vessel estimates tend to equalize within-category comparisons. For example, a whole whiskey bottle and several fragments of a single wine bottle are recovered from a hypothetical site. If numbers of sherds are utilized for the purposes of frequency calculation, one might come to the erroneous conclusion that wine was preferred to whiskey. Minimum vessel estimates were calculated for both ceramics and glass from the Camino site. In addition, because minimum vessel estimates had not previously been calculated for the sites within Jean Lafitte National Historical Park and Preserve investigated by Yakubik (1989), five of these collections were reanalyzed to acquire these data.[4] However, because the glass in all of the assemblages was nearly devoid of diagnostic attributes, these estimates were base largely on color. Consequently, consideration of glass vessel form is a useless exercise, and is not undertaken here.

Tables 27 through 32 present the minimum vessel estimates for each of the six sites. The Camino site yielded the most vessels (n=33), while 16JE216 was a close second with a total of 29 vessels. 16JE197 had 22, 16JE198 and 16JE214 each yielded 12, but only eight were recovered 16JE215. Nonetheless, the Camino site had the lowest ratio of vessel forms to total number of vessels (Table 33). Similarly, 16JE223 and 16JE216 had the lowest ratios of individual ceramic types to total numbers of vessels. Both cases might suggest that there is less stylistic and formal variability in the Camino collection as compared to the other sites. This may in fact be an artifice of sample size. The universes of both vessel form and ceramic

[4] 16JE199 was excluded because of the small size of the collection.

Table 27. Minimum Numbers of Vessels, Camino Site.

	Soup plate	Bowl	Saucer	Mug	Chamber Pot	Storage Vessel	Hollowware	Unidentified	Total
Creamware	3	2	1		2				8
Annular creamware		1							1
Mocha creamware				1			1		2
Blue hand-painted pearlware		2							2
Polychrome hand-painted pearlware							1		1
Annular pearlware		2							2
Green shell-edged pearlware	4								4
Whiteware								1	1
Saintonge Green-Glazed Buff Earthenware		2							2
Saintonge White-Slipped and Green-Glazed Pink Earthenware								1	1
Green-Glazed Redware							1		1
Flecked Lead-Glazed Redware		2							2
El Morro Ware								1	1
Brown-Glazed Redware								1	1
Mottled Green/Brown Lead Glazed Redware								1	1
Manganese-Glazed Redware		1							1
Spanish Olive Jar						1			1
Decorated Marine Ware		1							1
Total	7	13	1	1	2	1	3	5	33

Table 28. Minimum Numbers of Vessels, 16JE197.

	Soup Plate/Plate	Bowl	Large Bowl	Saucer	Pitcher	Storage Vessel	Hollowware	Unidentified	Total
Creamware	2	1			1				4
Annular creamware		1							1
Blue hand-painted pearlware				1					1
Polychrome hand-painted pearlware		2						2	4
Annular pearlware		1							1
Blue shell-edged pearlware	1								1
Faience	1								1
Albisola Trailed	1								1
Saintonge Green-Glazed Buff Earthenware		1							1
Flecked Lead-Glazed Redware			2					1	3
White on Red Slip-Decorated Redware							1		1
Brown-Glazed Redware			1						1
Manganese-Glazed Redware							1		1
Brown salt-glazed stoneware						1			1
Total	5	6	3	1	1	1	2	3	22

Table 29. Minimum Numbers of Vessels, 16JE198.

	Bowl	Large Bowl	Storage Vessel	Unidentified	Total
Creamware				1	1
Faience				1	1
Brown faience				1	1
Albisola Trailed	1				1
Saintonge Green-Glazed Buff Earthenware	1				1
Flecked Lead-Glazed Redware				1	1
White-Slipped and Lead-Glazed Redware				1	1
Redware (eroded glaze)		1			1
Brown-Glazed Redware		1		1	2
Spanish Olive Jar			1		1
Buff stoneware, red-slipped and salt glazed			1		1
Total	2	2	2	6	12

Table 30. Minimum Numbers of Vessels, 16JE214.

	Soup Plate/Plate	Bowl	Large Bowl	Cup	Storage Vessel	Unidentified	Total
Creamware	2	1		1			4
Polychrome hand-painted porcelain				1			1
Polychrome hand-painted pearlware		2					2
Blue shell-edged pearlware	1						1
Faience	1						1
Flecked Lead-Glazed Redware			1				1
Brown-Glazed Redware						1	1
Spanish Olive Jar					1		1
Total	4	3	1	2	1	1	12

Table 31. Minimum Numbers of Vessels, 16JE215.

	Soup Plate/Plate	Bowl	Unidentified	Total
Creamware	2	1		3
Pearlware		1		1
Brown faience			1	1
Saintonge Green-Glazed Buff Earthenware		1		1
Flecked Lead-Glazed Redware		1	1	2
Total	2	4	2	8

Table 32. Minimum Numbers of Vessels, 16JE216.

	Soup Plate/Plate	Bowl	Large Bowl	Saucer	Cup	Ointment Jar	Storage Vessel	Hollowware	Unidentified	Total
Creamware	3	2		1						6
Annular creamware								1		1
Polychrome hand-painted creamware		1								1
Pearlware									1	1
Faience	1					2				3
Polychrome hand-painted faience					1					1
Brown faience	1	1								2
Albisola Trailed	1				1					2
Saintonge Green-Glazed Buff Earthenware		1	2						1	4
Green-Glazed Redware								2		2
Pink-Slipped and Lead-Glazed Redware			1							1
Red on White Slip-Decorated Redware								1		1
Brown-Glazed Redware			1							1
Provence Jar							1			1
Spanish Olive Jar							1			1
Marine Ware									1	1
Total	6	5	4	1	2	2	2	4	3	29

Table 33. Comparison of Ratios of Vessel Form and Vessel Type to Total Number of Vessels.

	Ratio of Vessel Forms to Total Vessels	Ratio of Ceramic Types to Total Vessels
16JE197	1:3.1	1:1.6
16JE198	1:4.0	1:1.1
16JE214	1:2.4	1:1.5
16JE215	1:4.0	1:1.6
16JE216	1:3.6	1:1.8
16JE223	1:4.7	1:1.8

type are relatively finite, and one might expect to have lower ratios if there are more vessels. The ratio of ceramic types to total number of vessels seen in the 16JE216 collection seems to support this supposition; as demonstrated above, this is a very rich collection in comparison to those from the other *Isleño* sites. By contrast, the assemblage from 16JE198, one of the smallest collections, exhibited a remarkable amount of decorative variability (Table 29 and 33). However, this assemblage, along with 16JE215, also showed the next to the lowest ratio of vessel form to number of vessels. Similarly, the small collection from 16JE214 showed the highest level formal variability of the six collections, but only middling decorative variation (Tables 30 and 33). Thus, while sample size may be a factor, it is not the only determinant of ceramic variability.

Table 34 presents the frequencies and relative frequencies of the various ceramic vessel forms found at the six *Isleño* sites. It is immediately apparent that the samples from 16JE198, 16JE214, and 16JE215 are too small to be meaningful for comparative purposes. Nonetheless, 16JE223, 16JE197, and 16JE216 all have remarkably similar relative frequencies of plates. The former two both have a large proportion of bowls, while the relative frequency of bowls in the 16JE216 collection is less than that of plates. However, it should be noted that the miscellaneous hollowware category is larger for 16JE216 than for the other two sites; it is likely that some of these vessels represent bowls. Interestingly, bowls represent nearly one-half of the vessels in the Camino collection.

The Camino collection also contains fewer tableware forms besides plates and bowls than do the other two collections (Table 34). While the other tableware forms at Camino represent only 7.14 percent of the collection and are distributed between two types (saucers and mugs), those from 16JE197 include three forms (saucers, large bowls, and pitchers) comprising 26.32 percent of the collection. Similarly, those from 16JE216 represent 26.92 percent of the assemblage, and include cups, saucers and large bowls. The relative lack of all but the most necessary tableware forms (plates and bowls) in the Camino collection is further support of the suggestion that this was not a domestic occupation, or that at least that one of the two components was not a habitation.

None of the collections included many storage vessels (Table 34). This may indicate either little food storage occurred at the sites, or, more likely, that vessels containing stored foodstuffs were taken when the sites were abandoned. Because storage vessels are generally thick-walled and sturdy, breakage of this formal type might be expected to be less than other vessel types.

Perhaps the most surprising result of this analysis was that not one, but two chamber pots were represented in the Camino collection. No examples were found at any of the other sites. Their presence does not fit with the suggestion that one or both of the historic components were not domestic in nature. However, it is possible that these large, bowl-like vessels were utilized for some other function than that originally intended.

"Functional" Classification

"Functional" classification is potentially a dangerous undertaking, because an artifact may have had very different historic functions and meanings than those understood by the present-day researcher (Joseph 1993:63). An artifact can also have multiple uses and meanings, which makes utilization of a single classification for an item problematic. However, a functional typology does provide a useful means of ordering data for analytic and comparative purposes (Joseph 1989:65). Thus, if such a classification is undertaken with the understanding that the analyst is imposing his or her own values on the meaning and/or probable use of an object; that the "functional categories" to which the artifacts are assigned may or may not accurately reflect historic use; and that individual items might have multiple uses not reflected by the typology, then the technique can be an effective means of identifying unusual propor-

Table 34. Ceramic Vessel Forms for Six Canarian Sites.

	16JE223		16JE197		16JE198		16JE214		16JE215		16JE216	
	n	%	n	%	n	%	n	%	n	%	n	%
Soup Plate/Plate	7	25.00%	5	26.32%			4	36.36%	2	33.33%	6	23.08%
Bowl	13	46.43%	6	31.58%	2	33.33%	3	27.27%	4	66.67%	5	19.23%
Cup							2	18.18%			2	7.69%
Saucer	1	3.57%	1	5.26%							1	3.85%
Mug	1	3.57%										
Large Bowl			3	15.79%	2	33.33%	1	9.09%			4	15.38%
Pitcher			1	5.26%								
Ointment Jar											2	7.69%
Chamber Pot	2	7.14%										
Storage Vessel	1	3.57%	1	5.26%	2	33.33%	1	9.09%			2	7.69%
Hollowware	3	10.71%	2	10.53%							4	15.38%
Total	28	100.00%	19	100.00%	6	100.00%	11	100.00%	6	100.00%	26	100.00%

tions within various artifact groups. These anomalies in turn may flag certain classes or groups of artifacts which did in fact have different meanings and/or uses in their original contexts.

While acknowledging that artifact function should not be entirely ignored during analysis, Franks and Yakubik (1991:200-204) rejected the rote examination of artifact functional categories for the elucidation of artifact "patterns" (see also Orser 1989). The functional typology proposed by Franks and Yakubik (1991:200-204) and modified by Yakubik and Franks (1992b:269-271) is flexible enough to allow comparison with assemblages analyzed using other systems through the collapse and reorganization of categories. In addition, the dendritic nature of the framework permits the examination of intra-category differences that are generally obscured by more broadly-drawn "functional categories" (cf. South 1977). The purpose here is not to identify cultural "patterns," but to facilitate the analysis and understanding of material assemblages at individual sites.

Within Franks and Yakubik's (1991) framework, artifacts are broadly classified into two groups: those that reflect consumption and those that reflect production. The consumption group can then be broken into a series of sub-categories. These are: (1) housing; (2) clothing; (3) articles reflecting personal hygiene activities; (4) articles reflecting adornment and personal possession; (5) articles reflecting food consumption; (6) articles reflecting beverage consumption; (7) articles reflecting the use of medicines; (8) articles reflecting leisure activities; and (9) an "other" category. A tenth category proposed by Franks and Yakubik's (1991:204), "fuel consumption," was abandoned. Consisting primarily of coal, heating stove parts, and fireplace accouterments, it was found unworkable (Yakubik and Franks 1992b) because of the difficulty in quantifying coal in a meaningful way relative to other artifact types. Similarly, architectural debris (brick, mortar, plaster, etc.), slag, cinders, etc. are not counted because of the difficulties of quantification.

The Housing subcategory can be subdivided into architecture and furnishings. The former consists primarily of nails, flat glass, and architectural hardware such as hinges, brackets, door knobs, and the like. Furnishings include items such as drawer pulls, escutcheons, and casters. As noted above, brick, mortar, and plaster are not counted within this subcategory because of the difficulty of quantifying them in a meaningful fashion.

The Clothing subcategory is generally subdivided into fasteners (buttons, hooks and eyes, snaps, etc.), footwear, and, though rarely recovered, fabric. Because buttons are generally the most plentiful item in this subcategory, they are enumerated separately from other fasteners.

The Health and Hygiene subcategory is further divided into artifacts reflecting grooming, such as cosmetics, combs, brushes, and artifacts related to hygiene, such as chamber pots. "Grooming" is distinguished from "adornment" in that the former has a certain quality of necessity (one should comb one's hair) while the latter is not essential (one does not have to wear a comb in one's hair). Thus, the Adornment and Personals subcategory encompasses items such as jewelry, beads, currency, and other items of personal use, such as pocket knives.

The subcategory of Food Consumption subsumes several sub-behaviors. These are acquisition, preparation, preservation, and presentation. An initial breakdown of artifacts related to food consumption consists of (a) actual dietary refuse, i.e., faunal and floral remains, which have not been included in this analysis; (b) ceramic items; (c) glass items; and (d) metal items. Faunal and floral remains may reflect both acquisitions (i.e., domestic vs. feral) and preparation (e.g., roasts vs. stews, butchering techniques). Ceramic artifacts related to food consumption include tableware, which is related to both presentation and to items

consumed, and vessels related to food preparation. The latter would include mixing bowls and similar items. In addition, storage vessels should be considered within a third subcategory, which is preservation or storage. For the purposes herein, preparation and storage have been combined because of the low frequencies of each.

Similarly, glass items related to food consumption consist primarily of tableware, storage (canning) jars, and culinary bottles. The former is related to presentation, while the latter two provide information on both acquisition and preservation. Metal artifacts in the food consumption subcategory include cutlery, tableware, tin cans, pots and pans, and stoves. Cutlery and metal tableware relate to preparation, or more frequently, presentation. Tin cans reflect acquisition. Pots and pans along with stoves directly reflect preparation.

The size, shape, and type of a ceramic beverage container generally reflect its contents, and thereby provide information on Beverage Consumption. Bottles within this category are generally subdivided into alcoholic or non-alcoholic on the basis of probable contents. However, because the contents of a bottle cannot always be identified, the subcategory "unknown" is also utilized.

Even in the late-eighteenth century, medicines were obtained from commercial sources. These were contained within either ceramic or glass vessels. Ceramic medicine containers were likely to have held ointments and salves. Glass containers include pharmaceutical bottles and vials. All of these items are subsumed under the Medicine Consumption subcategory.

The Leisure Activities subcategory should reflect the nature of leisure pursuits. In this study, the subcategory consisted exclusively of smoking pipe fragments

The Other subcategory is intended as a catch-all for artifacts that do not really fit into the previous categories. Generally it includes items that are collected in small quantities. This category was not utilized for any of the *Isleño* collections.

Artifacts related to Production Activities generally consists primarily of tools. Agricultural implements, articles related to animal husbandry, and machinery fragments are included in this category, which almost invariably is comprised of exclusively metal artifacts. However, in this study, the largest group of production artifacts consisted of lead shot, gunflints, and flint debitage.

Each of the divisions within the categories and subcategories presented above can be further subdivided into increasingly specific units. For the present research, the sub-subcategories were separated by material (ceramic, glass, metal, etc.). While the level of specificity is ultimately up to the analyst and his/her research objectives, the level presented herein should be considered typical and useful for most analytic purposes. Frequencies were based on minimum item counts in an effort to prevent glass and ceramics from overwhelming the items that are generally found in lesser numbers, such as pipes, beads, etc. The relative frequency of each of the consumption subcategories and the production category was calculated. Percentages of the subdivisions within the subcategories were also determined. Finally, the relative frequencies of the materials representing each of these subdivisions were calculated. This analysis was performed for the Camino collection and for five[5] of the assemblages from Jean Lafitte National Park and Preserve (Table 35).

What is immediately apparent is architecture dominates the collections from all but the Camino site and the small collections from 16JE215 and 16JE198. While ceramics and glass

[5] The 16JE199 collection was excluded from this analysis because of its small size.

Table 35. Comparison of Functional Class Frequencies and Relative Frequencies for Six Canarian Sites.

	16JE223		16JE197		16JE214		16JE215		16JE198		16JE216	
	n	%	n	%	n	%	n	%	n	%	n	%
HOUSING	*94*	*33.10%*	*58*	*53.70%*	*53*	*70.67%*	*9*	*39.13%*	*9*	*36.00%*	*126*	*55.26%*
Architecture	**94**	**100.00%**	**55**	**100.00%**	**53**	**100.00%**	**9**	**100.00%**	**9**	**100.00%**	**126**	**100.00%**
Metal	94	100.00%	55	100.00%	53	100.00%	9	100.00%	9	100.00%	126	100.00%
CLOTHING	*5*	*1.76%*	*3*	*2.78%*	*1*	*1.33%*					*2*	*0.88%*
Buttons	**5**	**100.00%**	**2**	**66.67%**	**1**	**100.00%**						
Metal	5	100.00%	1	50.00%	1	100.00%						
Bone			1	50.00%								
Other Fasteners			**1**	**33.33%**							**2**	**100.00%**
Metal			1	100.00%							2	100.00%
HEALTH/HYGIENE	*2*	*0.70%*									*2*	*0.88%*
Hygiene	**2**	**100.00%**										
Ceramic	2	100.00%										
Grooming											**2**	**100.00%**
Ceramic											2	100.00%
ADORNMENT/PERSONAL	*5*	*1.76%*										
Decorative	**5**	**100.00%**										
Glass	5	100.00%										
FOOD CONSUMPTION	*33*	*11.62%*	*22*	*20.37%*	*13*	*17.33%*	*8*	*34.78%*	*12*	*48.00%*	*28*	*12.28%*
Presentation	**27**	**81.82%**	**14**	**63.64%**	**10**	**76.92%**	**7**	**87.50%**	**5**	**41.67%**	**16**	**57.14%**
Ceramic	26	96.30%	14	100.00%	9	69.23%	7	100.00%	5	100.00%	16	100.00%
Glass					1	7.69%						
Metal	1	3.70%										

Table 35. Comparison of Functional Class Frequencies and Relative Frequencies for Six Canarian Sites.

	16JE223		16JE197		16JE214		16JE215		16JE198		16JE216	
	n	%	n	%	n	%	n	%	n	%	n	%
Preparation/Storage	7	21.21%	8	36.36%	3	23.08%	1	12.50%	7	58.33%	12	42.86%
Ceramic	7	100.00%	8	100.00%	3	100.00%	1	100.00%	7	100.00%	11	91.67%
Glass											1	8.33%
BEVERAGE CONSUMPTION	*5*	*1.76%*	*4*	*3.70%*	*3*	*4.00%*	*3*	*13.04%*	*2*	*8.00%*	*6*	*2.63%*
Alcoholic	3	60.00%	2	50.00%	2	66.67%	2	66.67%	1	50.00%	4	66.67%
Glass	3	100.00%	2	100.00%	2	100.00%	2	100.00%	1	100.00%	4	100.00%
Unknown	2	40.00%	2	50.00%	1	33.33%	1	33.33%	1	50.00%	2	33.33%
Glass	2	100.00%	2	100.00%	1	100.00%	1	100.00%	1	100.00%	2	100.00%
MEDICINE CONSUMPTION	*1*	*0.35%*					*1*	*4.35%*				
Prescription/Patent	1	100.00%					1	100.00%				
Glass	1	100.00%					1	100.00%				
LEISURE ACTIVITIES	*11*	*3.87%*	*6*	*5.56%*	*2*	*2.67%*	*2*	*8.70%*	*2*	*8.00%*	*9*	*3.95%*
Smoking	11	100.00%	4	100.00%	2	100.00%	2	100.00%	2	100.00%	9	100.00%
Ceramic	11	100.00%	4	100.00%	2	100.00%	2	100.00%	2	100.00%	9	100.00%
PRODUCTION ACTIVITIES	*128*	*45.07%*	*15*	*13.89%*	*3*	*4.00%*					*55*	*24.12%*
Weapons	127	99.22%	14	93.33%	2	66.67%					55	100.00%
Metal	96	75.59%	7	50.00%	2	100.00%					40	72.73%
Lithic	31	24.41%	7	50.00%							15	27.27%
Tools	1	0.78%	1	6.67%	1	33.33%						
Metal	1	100.00%	1	100.00%	1	100.00%						
TOTAL	284	100.00%	108	100.00%	75	100.00%	23	100.00%	25	100.00%	228	100.00%

generally are the most common items in any historic assemblage, the use of minimal vessel counts significantly reduces their frequency. Unfortunately, there is no reasonable means of reducing the count of nails. Housing artifacts represented more than half of the collections at both 16JE197 and 16JE216. At 16JE214, where the excavation units were placed on an architectural feature, Housing artifacts represented over 70 percent of the collection. However, 16JE223 yielded fewer housing artifacts than did the two tiny samples from 16JE215 and 16JE198. Again, this paucity of nails suggests that there were few structural improvements at the Camino site in comparison to the relatively substantial domestic occupation at 16JE197, 16JE1214, and 16JE216.

Because of the high proportion of architectural material at three of the six sites, the percentages were recalculated after excluding the Housing subcategory in order to emphasize the relative frequencies of the remaining subcategories. The results are presented in Table 36. Here, the Food Consumption subcategory becomes dominant in all of the collections except for 16JE216 and the Camino site. In these latter two cases, the majority of the remaining artifacts fall within Production Activities, and specifically within hunting. This is particularly dramatic in the case of the Camino site, where a full two-thirds of the artifacts consist of shot and flint. Initially, it was suspected that this might be an artifice of the extensive soil flotation undertaken at the site, that this in fact improved our recovery of the small-sized shot. However, comparison of the relative frequencies of lithic and metal hunting artifacts at both 16JE223 and 16JE216 shows that the proportions are nearly identical. If flotation was affecting the recovery of the lead shot, we might expect the Camino collection to have a higher frequency of metal relative to lithics. Clearly, hunting was important at both Camino and at 16JE216, but it was most important at the Camino site.

It should be noted here that both 16JE197 and 16JE214 yielded relatively high proportions of Production Activity artifacts, but not nearly the quantity seen at 16JE223 and 16JE216. No Production Activity artifacts were found at 16JE215 and 16JE198, but this appears to be the result of sampling error.

Tables 35 and 36 also highlight the relative paucity of material related to food and beverage consumption at the Camino site; in both cases, the 16JE223 collection yielded the lowest relative frequencies. Within the Food Consumption subcategory, the relative frequencies of presentation and preparation/storage items varied dramatically among the six sites, between 41.67 and 87.5 percent for the former, and 12.5 and 58.33 for the latter. Thus, there does not seem to have been a "standard" proportion of tableware to utilitarian vessels. Given the material poverty of the inhabitants of the *Población*, it seems likely that vessels did not have dedicated uses, and that individuals utilized what little they had available for whatever their need was at a given time.

In terms of beverages, all bottles that were identified as to function appeared to have held alcoholic beverages, which is typical of late-eighteenth-century collections (Table 36). All of the sites yielded fragments of alcoholic beverage bottles. However, medicine consumption was less common; only 16JE223 and 16JE215 contained fragments of what appeared to be medicine vials.

The Clothing, Health/Hygiene, and Adornment/Personal subcategory artifacts all occurred in low frequencies, and their presence or absence within the collections appears to be largely the result of sampling error (Table 36). All three subcategories were represented in the Camino collection which is not surprising given that this site received the most extensive field investigations of the six sites. However, Clothing subcategory artifacts were only found in the four largest collections, while the Health/Hygiene subcategory was only represented in the two largest collections. By contrast, smoking pipe fragments were recovered at all of the sites; this artifact group was the sole Leisure subcategory type recovered. Interestingly, the

Table 36. Comparison of Functional Class Frequencies and Relative Frequencies for Six Canarian Sites, Excluding the Housing Category.

	16JE223		16JE197		16JE214		16JE215		16JE198		16JE216	
	n	%	n	%	n	%	n	%	n	%	n	%
CLOTHING	*5*	*2.63%*	*3*	*6.00%*	*1*	*4.55%*					*2*	*1.96%*
Buttons	**5**	**100.00%**	**2**	**66.67%**	**1**	**100.00%**						
Metal	5	100.00%	1	50.00%	1	100.00%						
Bone			1	50.00%								
Other Fasteners			**1**	**33.33%**							**2**	**100.00%**
Metal			1	100.00%							2	100.00%
HEALTH/HYGIENE	*2*	*1.05%*									*2*	*1.96%*
Hygiene	**2**	**100.00%**										
Ceramic	2	100.00%										
Grooming											**2**	**100.00%**
Ceramic											2	100.00%
ADORNMENT/PERSONAL	*5*	*2.63%*										
Decorative	**5**	**100.00%**										
Glass	5	100.00%										
FOOD CONSUMPTION	*33*	*17.37%*	*22*	*44.00%*	*13*	*59.09%*	*8*	*57.14%*	*12*	*75.00%*	*28*	*27.45%*
Presentation	**27**	**81.82%**	**14**	**63.64%**	**10**	**76.92%**	**7**	**87.50%**	**5**	**41.67%**	**16**	**57.14%**
Ceramic	26	96.30%	14	100.00%	9	69.23%	7	100.00%	5	100.00%	16	100.00%
Glass					1	7.69%						
Metal	1	3.70%										
Preparation/Storage	**7**	**21.21%**	**8**	**36.36%**	**3**	**23.08%**	**1**	**12.50%**	**7**	**58.33%**	**12**	**42.86%**
Ceramic	7	100.00%	8	100.00%	3	100.00%	1	100.00%	7	100.00%	11	91.67%
Glass											1	8.33%

Table 36. Comparison of Functional Class Frequencies and Relative Frequencies for Six Canarian Sites, Excluding the Housing Category.

	16JE223		16JE197		16JE214		16JE215		16JE198		16JE216	
	n	%	n	%	n	%	n	%	n	%	n	%
BEVERAGE CONSUMPTION	*5*	*2.63%*	*4*	*8.00%*	*3*	*13.64%*	*3*	*21.43%*	*2*	*12.50%*	*6*	*5.88%*
Alcoholic	**3**	**60.00%**	**2**	**50.00%**	**2**	**66.67%**	**2**	**66.67%**	**1**	**50.00%**	**4**	**66.67%**
Glass	3	100.00%	2	100.00%	2	100.00%	2	100.00%	1	100.00%	4	100.00%
Unknown	**2**	**40.00%**	**2**	**50.00%**	**1**	**33.33%**	**1**	**33.33%**	**1**	**50.00%**	**2**	**33.33%**
Glass	2	100.00%	2	100.00%	1	100.00%	1	100.00%	1	100.00%	2	100.00%
MEDICINE CONSUMPTION	*1*	*0.53%*					*1*	*7.14%*				
Prescription/Patent	**1**	**100.00%**					**1**	**100.00%**				
Glass	1	100.00%					1	100.00%				
LEISURE ACTIVITIES	*11*	*5.79%*	*6*	*12.00%*	*2*	*9.09%*	*2*	*14.29%*	*2*	*12.50%*	*9*	*8.82%*
Smoking	**11**	**100.00%**	**4**	**100.00%**	**2**	**100.00%**	**2**	**100.00%**	**2**	**100.00%**	**9**	**100.00%**
Ceramic	11	100.00%	4	100.00%	2	100.00%	2	100.00%	2	100.00%	9	100.00%
PRODUCTION ACTIVITIES	*128*	*67.37%*	*15*	*30.00%*	*3*	*13.64%*					*55*	*53.92%*
Hunting/Fishing	**127**	**99.22%**	**14**	**93.33%**	**2**	**66.67%**					**55**	**100.00%**
Metal	96	75.59%	7	50.00%	2	100.00%					40	72.73%
Lithic	31	24.41%	7	50.00%							15	27.27%
Agricultural	**1**	**0.78%**	**1**	**6.67%**	**1**	**33.33%**						
Metal	1	100.00%	1	100.00%	1	100.00%						
TOTAL	190	100.00%	50	100.00%	22	100.00%	14	100.00%	16	100.00%	102	100.00%

proportions of this subcategory appear more even than any of the other subcategories, and what little variation there is (less that 9 percent overall) seems to be largely the result of sampling error.

The Camino and other *Isleño* collections were compared to two contemporary sites investigated by ESI. The first of these, 16OR136, is the Durel cottage located on Toulouse Street in New Orleans' *Vieux Carré*. Material from this site derived from a domestic component of uncertain socio-economic standing that was destroyed in the 1788 New Orleans fire. In contrast to the Camino site, 16OR136 was located in an urban environment, and presumably, market access was excellent. Unfortunately, the sample size was relatively small once the Housing subcategory artifacts were excluded. The second site, 16JE141, is a slave cabin at Orange Grove Plantation that dates to the period ca. 1780-1800. These data are extensive due to five seasons of excavations at the site. Functional class frequencies were calculated for these two sites, both including and excluding the Housing subcategory. The results are presented in Tables 37 and 38.

Both sites exhibited very high proportions of Housing subcategory artifacts, and while that from 16OR136 was somewhat higher, this was probably the result of the abrupt destruction of the structure at the site as a result of the fire (Table 37). Interestingly, unlike the *Isleño* collections, the housing subcategories for these sites did not consist exclusively of nails; ceramic, glass, and stone items were also present. In addition, the remains of furnishings were found at both 16OR136 and 16JE141. This probably reflects the superior market access both in urban New Orleans and at a Mississippi River Plantation directly above the city, as well as the fact that the furnishings held by the *Isleños* were likely quite plain, and were taken with them when they abandoned the sites. The proportions of Housing subcategory artifacts also reinforce the idea that Camino was probably not a domestic occupation, given that high relative frequencies of housing artifacts is apparently typical of such sites.

The collections from 16OR136 and 16JE141 also support the suggestion that Clothing, Health/Hygiene, and Adornment/Personal subcategory artifacts all occur in low frequencies, and that their presence/absence is largely the result of sample error (Table 38). These subcategories were recovered in low relative frequencies in the huge Orange Grove collection and were largely absent from the Durel cottage site. Similarly, no evidence of medicine consumption was found at either site.

The Food Consumption subcategory was high at both of the sites, and within the range set by the *Isleño* sites excluding Camino and 16JE216 (Tables 36 and 38). The proportions of presentation relative to preparation/storage were closer for 16OR136 and 16JE141 than was the case among the *Isleño* sites, but all sites had a greater relative frequency of presentation items. Like the *Isleño* sites, only alcoholic beverage containers were found at 16OR136 and 16JE141. Neither of the sites yielded medicine bottles.

Leisure Activities were represented in higher relative frequencies than was the case at the *Isleño* sites (Table 38) and there were a greater variety of items, including toys and musical instruments in the Orange Grove collection. However, the proportions of Production Activity artifacts at 16OR136 and 16JE141 are lower than at the *Isleño* sites where this subcategory was represented, and particularly at 16JE223 and 16JE216. This may illustrate the difference in activities at the sites; production, and specifically hunting, was a more important activity in the hostile Barataria environment.

To summarize, functional analysis has provided additional support for the suggestions that: (1) architectural improvements at the Camino site were limited; (2) domestic activity, particularly in the form of food and beverage consumption, was limited at the Camino site: and (3) production in the form of hunting likely was the primary activity at the Camino site.

Table 37. Functional Class Frequencies for 16OR136 and 16JE141.

	16OR136		16JE141	
	n	%	n	%
HOUSING	*163*	*84.46%*	*1117*	*64.45%*
Architecture	**161**	**98.77%**	**1091**	**97.67%**
Ceramic	5	3.11%		
Glass	128	79.50%	159	14.57%
Metal	25	15.53%	905	82.95%
Stone	3	1.86%	27	2.47%
Furnishings	**2**	**1.23%**	**26**	**2.33%**
Brass	2	100.00%	4	15.38%
Copper			2	7.69%
Other Metal			20	76.92%
CLOTHING	*0*	*0.00%*	*28*	*1.62%*
Buttons			**22**	**78.57%**
Bone			17	77.27%
Brass			3	13.64%
Ceramic			2	9.09%
Other Fasteners			**6**	**21.43%**
Brass			3	50.00%
Copper-alloy			2	33.33%
Other			1	16.67%
HEALTH/HYGIENE	*0*	*0.00%*	*11*	*0.63%*
Hygiene			**5**	**45.45%**
Ceramic			5	100.00%
Grooming			**6**	**60.00%**
Bone			2	33.33%
Ceramic			3	50.00%
Metal			1	16.67%
ADORNMENT/ PERSONAL	*0*	*0.00%*	*30*	*1.73%*
Decorative			**4**	**13.33%**
Glass			2	50.00%
Metal			2	50.00%
Ideological			**25**	**83.33%**
Bone			2	8.00%
Glass			14	56.00%
Metal			7	28.00%
Stone			2	8.00%
Pocket Knives			**1**	**3.33%**

Table 37. Functional Class Frequencies for 16OR136 and 16JE141.

FOOD CONSUMPTION	*20*	*10.36%*	*268*	*15.46%*
Presentation	**13**	**65.00%**	**192**	**71.64%**
Ceramic	12	92.31%	190	98.96%
Glass	1	7.69%	2	1.04%
Preparation/Storage	**7**	**35.00%**	**76**	**28.36%**
Ceramic	3	42.86%	9	11.84%
Glass	4	57.14%		
Metal			65	85.53%
Bone			1	1.32%
Lithic			1	1.32%
BEVERAGE CONSUMPTION	*3*	*1.55%*	*7*	*0.40%*
Alcoholic	**3**	**100.00%**	**7**	**100.00%**
Glass	3	100.00%	7	100.00%
MEDICINE CONSUMPTION	*0*	*0.00%*	*0*	*0.00%*
LEISURE ACTIVITIES	*5*	*2.59%*	*239*	*13.79%*
Smoking	**5**	**100.00%**	**235**	**98.33%**
Toys	**0**	**0.00%**	**3**	**1.26%**
Ceramic			2	66.67%
Stone			1	33.33%
Music	**0**	**0.00%**	**1**	**0.42%**
Metal			1	100.00%
OTHER NON-PRODUCTION ACTIVITIES	*0*	*0.00%*	*1*	*0.06%*
Writing			**1**	**100.00%**
PRODUCTION ACTIVITIES	*2*	*1.04%*	*32*	*1.85%*
Hunting/Fishing	**1**	**50.00%**	**17**	**53.13%**
Flint	1	100.00%	11	64.71%
Lead			4	23.53%
Other metal			2	11.76%
Agricultural	**0**	**0.00%**	**15**	**46.88%**
Metal			15	100.00%
Sewing	**1**	**50.00%**		
Copper-alloy	1	100.00%		
TOTAL	*193*	*100.00%*	*1733*	*100.00%*

Table 38. Functional Class Frequencies for 16OR136 and 16JE141, Excluding the Housing Category.

	16OR136		16JE141	
	n	%	n	%
CLOTHING	*0*	*0.00%*	*28*	*4.55%*
Buttons			**22**	**78.57%**
Bone			17	77.27%
Brass			3	13.64%
Ceramic			2	9.09%
Other Fasteners			**6**	**21.43%**
Brass			3	50.00%
Copper-alloy			2	33.33%
Other			1	16.67%
HEALTH/HYGIENE	*0*	*0.00%*	*11*	*1.79%*
Hygiene			**5**	**45.45%**
Ceramic			5	100.00%
Grooming			**6**	**60.00%**
Bone			2	33.33%
Ceramic			3	50.00%
Metal			1	16.67%
ADORNMENT/ PERSONAL	*0*	*0.00%*	*30*	*4.87%*
Decorative			**4**	**13.33%**
Glass			2	50.00%
Metal			2	50.00%
Ideological			**25**	**83.33%**
Bone			2	8.00%
Glass			14	56.00%
Metal			7	28.00%
Stone			2	8.00%
Pocket Knives			**1**	**3.33%**
FOOD CONSUMPTION	*20*	*66.67%*	*268*	*43.51%*
Presentation	**13**	**65.00%**	**192**	**71.64%**
Ceramic	12	92.31%	190	98.96%
Glass	1	7.69%	2	1.04%
Preparation/Storage	**7**	**35.00%**	**76**	**28.36%**
Ceramic	3	42.86%	9	11.84%
Glass	4	57.14%		
Metal			65	85.53%
Bone			1	1.32%
Lithic			1	1.32%

Table 38. Functional Class Frequencies for 16OR136 and 16JE141, Excluding the Housing Category.

BEVERAGE CONSUMPTION	***3***	***10.00%***	***7***	***1.14%***
Alcoholic	**3**	**100.00%**	**7**	**100.00%**
Glass	3	100.00%	7	100.00%
MEDICINE CONSUMPTION	***0***	***0.00%***	***0***	***0.00%***
LEISURE ACTIVITIES	***5***	***16.67%***	***239***	***38.80%***
Smoking	**5**	**100.00%**	**235**	**98.33%**
Toys	**0**	**0.00%**	**3**	**1.26%**
Ceramic			2	66.67%
Stone			1	33.33%
Music	**0**	**0.00%**	**1**	**0.42%**
Metal			1	100.00%
OTHER NON-PRODUCTION ACTIVITIES	***0***	***0.00%***	***1***	***0.16%***
Writing			**1**	**100.00%**
PRODUCTION ACTIVITIES	***2***	***6.67%***	***32***	***5.19%***
Hunting/Fishing	**1**	**50.00%**	**17**	**53.13%**
Flint	1	100.00%	11	64.71%
Lead			4	23.53%
Other metal			2	11.76%
Agricultural	**0**	**0.00%**	**15**	**46.88%**
Metal			15	100.00%
Sewing	**1**	**50.00%**		
Copper-alloy	1	100.00%		
TOTAL	***30***	***100.00%***	***616***	***100.00%***

These conclusions were reached by comparison of the 16JE223 collection with those from the other *Isleño* sites, as well as from an urban and a plantation slave site. The historic artifact analyses thus provide the impression that 16JE223 functioned as a hunting camp during either the late-eighteenth or early-nineteenth centuries.

CHAPTER 11
ABORIGINAL ARTIFACTS FROM THE CAMINO SITE

A total of 156 aboriginal ceramic sherds were recovered at the Camino site, along with 71 "sherdlets," weighing 15.65 grams, and 45 pieces of fired clay, weighing 29.08 grams. These artifacts are summarized in Table 39, and listed by specific provenience in Tables 40-55. Figures 49 and 50 illustrate selected rim profiles and decorated sherds. The overwhelming majority of the ceramics are undecorated, and are largely non-diagnostic. This chapter discusses the aboriginal artifact analysis and suggests a chronological framework for dating the aboriginal occupation of this site.

Methods of Analysis

The ceramics from the Camino site were analyzed and classified according to standard methodologies developed in the Lower Mississippi Valley. Sherds were sorted into temper categories corresponding to published ceramic types, and decorated pottery was further divided into varieties based on specific decorative criteria. The type-variety nomenclature is based on Phillips (1970) and Williams and Brain (1983), supplemented by descriptions of pottery from nearby sites and aboriginal components (Brown 1978; Fuller 1991; Giardino 1989, 1990; McIntire 1958b; Wells et al. 1995; Wiseman et al. 1979).

After washing, sherds were passed through a 6.44 mm mesh screen. Objects which passed through the screen were identified as "sherdlets." These were counted and weighed, but no attempt was made to further classify these pieces. Fired clay was identified by the lack of flat surfaces or evidence of temper inclusions. Fired clay was also counted and weighed. Paste characteristics of the pottery which did not pass through the screen were identified by macroscopic examination, aided by the use of a low-power hand lens (10x magnification) where attribution to a specific temper category was uncertain.

The bulk of the pottery falls in the category Baytown Plain, which is characterized as a "clay" or "grog" tempered ceramic. Since there are existing varietal definitions of this ceramic plainware (Giardino 1989, 1990; Phillips 1970:47-57; Wells et al. 1995; Williams and Brain 1983:91-105), these were utilized when possible in order to try to link the distributions of these varieties through space and time. Several new plainware varieties recently have been created to accommodate the variation in paste and temper characteristics in the Bayou Des Familles region (Giardino 1989; Wells et al. 1995). The validity of these newly defined varieties will only be born out through further research and analysis.

Decorated pottery was sorted according to characteristics of decorative intent (incising, punctation, and combinations), and assigned to varieties where possible based on comparison to published materials. Following Phillips' rule of continuity (1970:27), we have elected to avoid identifying sherds to varieties if there is not a locally defined taxon available. In some instances, we have noted where unspecified varieties share attributes with named varieties in other parts of the Mississippi Valley or Gulf Coast. Ideally, varieties of all decorated ceramics should be identified within the existing collection; however, because of the small sample of decorated sherds this is simply not possible. Conservative use of variety attribution is called for in this instance in order to prevent the "typological creep" of inappropriately classified ceramics. The Mississippi River Delta is culturally unique, and the ceramics deserve their own specific classification. As several authors have noted (Phillips 1970; Weinstein 1987), it is imperative for regional sequences to be developed based on local ceramic attributes and varieties.

Table 39. Summary of Aboriginal Ceramics from 16JE223.

Provenience		N80 E121	N82.5 E124	N82.5 E125	N83.8 E130	N84.5 E117.5	N84.5 E131	N84.5 E132	N85.1 E123	N86 E129	N87 E129	N92 E120.5	N94 E124.5	N99 E127	Shovel Tests	Surface*	Total
Type	*variety*																
Anna Incised,	*var. unspecified*	1															1
Buras Incised,	*var. unspecified*	4															4
Mazique Incised,	*var. unspecified*							3									3
Unclassified Curvilinear Incised on Baytown Plain,	*var. unspecified*	1		1													2
Unclassified Incised on Baytown Plain,	*var. Cataouatche*	2											1				3
Unclassified Incised and Punctated on Baytown Plain,	*var. Crown Point*												6				6
Unclassified Decorated on Baytown Plain,	*var. Crown Point*												1			1	2
Addis Plain,	*var. unspecified*	2							4								6
Baytown Plain,	*var. Cataouatche*	26	10	3	3	2		2	1			5	5	1	7	4	69
Baytown Plain,	*var. Crown Point*				1	1						1	8				11
Baytown Plain,	*var. Jean Lafitte*									1	1				1		3
Baytown Plain,	*var. unspecified*	8	4	10	1	2	2		5	8		1			1	4	46
Total		**44**	**14**	**14**	**5**	**5**	**2**	**5**	**10**	**9**	**1**	**7**	**21**	**1**	**9**	**9**	**156**
Sherdlets	*Weight (in grams)*	2.5	0.18	4.52	1.8		0.01	0.03	3.15	0.08		2.11	1.14		0.11	0.02	15.65
	Number	7	12	8	4		1	3	8	5		10	7		5	1	71
Fired Clay	*Weight (in grams)*		7.75	0.01	1.13		10.6	5.06	4.5			0.03					29.08
	Number		6	1	8		13	9	6			2					45
Unifacially Retouched Chert Flake								1									1

* Includes Delta Chapter Surface Collection

Table 40. Aboriginal Ceramics from Shovel Tests.

Type	Provenience / *variety*	N76 E115 Rim	N76 E115 Body	N76 E115 Total	N80 E120 Rim	N80 E120 Body	N80 E120 Total	N80 E130 Rim	N80 E130 Body	N80 E130 Total	N85 E120 Rim	N85 E120 Body	N85 E120 Total	N95 E115 Rim	N95 E115 Body	N95 E115 Total	N95 E120 Rim	N95 E120 Body	N95 E120 Total	N112 E136 Rim	N112 E136 Body	N112 E136 Total	N112 E138 Rim	N112 E138 Body	N112 E138 Total	**Total**
Baytown Plain,	*var. Cataouatche*		1	1		3	3			0		1	1			0			0			0		2	2	**7**
Baytown Plain,	*var. Jean Lafitte*			0			0		1	1			0			0			0			0			0	**1**
Baytown Plain,	*var. unspecified*			0			0			0			0			0		1	1			0			0	**1**
Total		**0**	**1**	**1**	**0**	**3**	**3**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**2**	**9**
Sherdlets	*Weight (in grams)*						0.01			0.01						0.01						0.08				**0.11**
	Number						1			1						1						2				**5**

Table 41. Aboriginal Ceramics from Surface Collection.

Type	Provenience *variety*	Locus B Rim	Body	Total	**Total**
Baytown Plain,	*var. Catahoulatche*		1	1	**1**
Baytown Plain,	*var. unspecified*	1	1	2	**2**
Total		**1**	**2**	**3**	**3**

Table 42. Aboriginal Ceramics Collected by Delta Chapter, Lousiana Archaeological Society.

Type	Provenience / *variety*	LAS 1 Rim	LAS 1 Body	LAS 1 Total	LAS 2 Rim	LAS 2 Body	LAS 2 Total	LAS 3 Rim	LAS 3 Body	LAS 3 Total	LAS 4 Rim	LAS 4 Body	LAS 4 Total	LAS 5 Rim	LAS 5 Body	LAS 5 Total	LAS 6 Rim	LAS 6 Body	LAS 6 Total	**Total**
Unclassified Decorated on Baytown Plain,	*var. Crown Point*			0		1	1			0			0			0			0	**1**
Baytown Plain,	*var. Cataouatche*		1	1			0		1	1	1		1			0			0	**3**
Baytown Plain,	*var. unspecified*			0			0			0			0		1	1		1	1	**2**
Total		**0**	**1**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**1**	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**6**
Sherdlets	Weight (in grams)									0										**0.02**
	Number									1										**1**

LAS 1 "28' @ 60° from Flagged Tree" Surface Collection
LAS 2 "53.5' @ 310°" Surface Collection
LAS 3 "Jelaf Ext. 55' @90° metal det. Shovel Test # 4"
LAS 4 "64.5' @ 26° from Flagged Tree" Surface Collection
LAS 5 "34' @ 40° from Flagged Tree" Surface Collection
LAS 6 "47' @ 47° from Flagged Tree" Surface Collection

Table 43. Aboriginal Ceramics from N80 E121.

Type	Provenience *variety*	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Level B3 Rim	Body	Total	**Total**
Anna Incised,	*var. unspecified*			0		1	1			0	**1**
Buras Incised,	*var. unspecified*			0		1	1		3	3	**4**
Unclassified Curvilinear Incised on Baytown Plain,	*var. unspecified*			0		1	1			0	**1**
Unclassified Incised on Baytown Plain,	*var. Cataouatche*			0		1	1		1	1	**2**
Addis Plain,	*var. unspecified*			0		1	1		1	1	**2**
Baytown Plain,	*var. Cataouatche*		1	1	1	22	23		2	2	**26**
Baytown Plain,	*var. unspecified*			0	1	5	6	1	1	2	**8**
Total		**0**	**1**	**1**	**2**	**32**	**34**	**1**	**8**	**9**	**44**
Sherdlets	*Weight (in grams)*									2.5	**2.5**
	Number									7	**7**

Table 44. Aboriginal Ceramics from N82.5 E124.

Type	Provenience / *variety*	Level A3			Level B1			Level B2			Level B3			Level C1			Level C2			Total
		Rim	Body	Total	Rim	Body	Total	Rim	Body	Total	Rim	Body	Total	Rim	Body	Total	Rim	Body	Total	
Baytown Plain,	*var. Cataouatche*		1	1			0		1	1		5	5		2	2		1	1	**10**
Baytown Plain,	*var. unspecified*			0		1	1	2		2			0		1	1			0	**4**
Total		**0**	**1**	**1**	**0**	**1**	**1**	**2**	**1**	**3**	**0**	**5**	**5**	**0**	**3**	**3**	**0**	**1**	**1**	**14**
Sherdlets	*Weight (in grams)*			0.07						0.07						0.04				**0.18**
	Number			6						3						3				**12**
Fired Clay	*Weight (in grams)*									7.7						0.05				**7.75**
	Number									4						2				**6**

Table 45. Aboriginal Ceramics from N82.5 E125.

Type	Provenience *variety*	Level A1 Rim	Body	Total	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Feature 2 Rim	Body	Total	**Total**
Unclassified Curvilinear Incised on	*var. unspecified*			0		1	1			0				**1**
Baytown Plain,	*var. Cataouatche*		2	2		1	1			0				**3**
Baytown Plain,	*var. unspecified*			0		1	1		7	7	0	2	2	**10**
Total		**0**	**2**	**2**	**0**	**3**	**3**	**0**	**7**	**7**	**0**	**2**	**2**	**12**
Sherdlets	*Weight (in grams)*						0.02			4.5				**4.52**
	Number						1			7				**8**
Fired Clay	*Weight (in grams)*			0.01										**0.01**
	Number			1										**1**

Table 46. Aboriginal Ceramics from N83.8 E130.

Type	Provenience *variety*	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	**Total**
Baytown Plain,	*var. Cataouatche*		1	1		2	2	**3**
Baytown Plain,	*var. Crown Point*			0		1	1	**1**
Baytown Plain,	*var. unspecified*			0		1	1	**1**
Total		**0**	**1**	**1**	**0**	**4**	**4**	**5**
Sherdlets	*Weight (in grams)*			1.8				**1.8**
	Number			4				**4**
Fired Clay	*Weight (in grams)*			0.03			1.1	**1.13**
	Number			1			7	**8**

Table 47. Aboriginal Ceramics from N84.5 E117.5.

Type	Provenience *variety*	Level A2 Rim	Body	Total	Level B1 Rim	Body	Total	**Total**
Baytown Plain,	*var. Cataouatche*		2	2			0	**2**
Baytown Plain,	*var. Crown Point*		1	1			0	**1**
Baytown Plain,	*var. unspecified*			0		2	2	**2**
Total		**0**	**3**	3	**0**	**2**	2	**5**

Table 48. Aboriginal Ceramics from N84.5 E131.

Type	Provenience *variety*	Level A2 Rim	Body	Total	Level B1 Rim	Body	Total	**Total**
Baytown Plain,	*var. unspecified*		1	1		1	1	**2**
Total		**0**	**1**	**1**	**0**	**1**	**1**	**2**
Sherdlets	*Weight (in grams)*			0.01				**0.01**
	Number			1				**1**
Fired Clay	*Weight (in grams)*						10.6	**10.6**
	Number						13	**13**

Table 49. Aboriginal Ceramics from N84.5 E132.

Type	Provenience / *variety*	Level A1 Rim	Level A1 Body	Level A1 Total	Level B1 Rim	Level B1 Body	Level B1 Total	Level B2 Rim	Level B2 Body	Level B2 Total	Level B3 Rim	Level B3 Body	Level B3 Total	Level B4 Rim	Level B4 Body	Level B4 Total	**Total**
Mazique Incised,	*var. unspecified*			0			0		3	3			0			0	**3**
Baytown Plain,	*var. Cataouatche*			0		1	1			0			0		1	1	**2**
Total		**0**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	**3**	**0**	**0**	**0**	**0**	**1**	**1**	**5**
Sherdlets	*Weight (in grams)*			0.01			0.02										**0.03**
	Number			1			2										**3**
Fired Clay	*Weight (in grams)*									0.1			0.05			0.01	**0.16**
	Number									5			3			1	**9**
Unifacially retouched Chert Flake																1	**1**

Table 50. Aboriginal Ceramics from N85.1 E123.

Type	Provenience *variety*	Level A2 Rim	Body	Total	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Level C1 Rim	Body	Total	**Total**
Addis Plain,	*var. unspecified*			0			0			0		4	4	**4**
Baytown Plain,	*var. Cataouatche*			0			0		1	1			0	**1**
Baytown Plain,	*var. unspecified*			0		1	1		1	1		3	3	**5**
Total		**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**7**	**7**	**10**
Sherdlets	*Weight (in grams)*			0.02						3.1			0.03	**3.15**
	Number			1						5			2	**8**
Fired Clay	*Weight (in grams)*			4.5										**4.5**
	Number			6										**6**

Table 51. Aboriginal Ceramics from N86 E129.

Type	Provenience *variety*	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Level C1 Rim	Body	Total	**Total**
Baytown Plain,	*var. Jean Lafitte*			0		1	1			0	**1**
Baytown Plain,	*var. unspecified*			0		8	8			0	**8**
Total		**0**	**0**	**0**	**0**	**9**	**9**	**0**	**0**	**0**	**9**
Sherdlets	*Weight (in grams)*			0.06			0.01			0.01	**0.08**
	Number			3			1			1	**5**

Table 52. Aboriginal Ceramics from N87 E129.

Type	Provenience *variety*	Level A2 Rim	Body	Total	**Total**
Baytown Plain,	*var. Jean Lafitte*		1	1	**1**
Total		**0**	**1**	**1**	**1**

Table 53. Aboriginal Ceramics from N92 E120.5.

Type	Provenience *variety*	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Level D1 Rim	Body	Total	**Total**
Baytown Plain,	*var. Cataouatche*			0		1	1	1	3	4	**5**
Baytown Plain,	*var. Crown Point*		1	1			0			0	**1**
Baytown Plain,	*var. unspecified*			0		1	1			0	**1**
Total		**0**	**1**	**1**	**0**	**2**	**2**	**1**	**3**	**4**	**7**
Sherdlets	*Weight (in grams)*			0.01			1.7			0.4	**2.11**
	Number			1			5			4	**10**
Fired Clay	*Weight (in grams)*									0.03	**0.03**
	Number									2	**2**

Table 54. Aboriginal Ceramics from N94 E124.5.

Type	Provenience *variety*	Level A2 Rim	Body	Total	Level B1 Rim	Body	Total	Level B2 Rim	Body	Total	Level C1 Rim	Body	Total	**Total**
Unclassified Incised on Baytown Plain,	*var. Cataouatche*			0		1	1			0			0	**1**
Unclassified Incised and Punctated on Baytown Plain,	*var. Crown Point*			0		4	4		2	2			0	**6**
Unclassified Decorated on Baytown Plain,	*var. Crown Point*					1	1							**1**
Baytown Plain,	*var. Cataouatche*			0		5	5			0			0	**5**
Baytown Plain,	*var. Crown Point*			0		5	5		1	1	2		2	**8**
Total		**0**	**0**	**0**	**0**	**16**	**16**	**0**	**3**	**3**	**2**	**0**	**2**	**21**
Sherdlets	*Weight (in grams)*			0.04			1.07			0.03				**1.14**
	Number			1			5			1				**7**

Table 55. Aboriginal Ceramics from N99 E127.

Type	Provenience *variety*	Level B1 Rim	Body	Total	**Total**
Unclassified Incised on Baytown Plain,	*var. Cataouatche*		1	1	**1**
Total		**0**	**1**	**1**	**1**

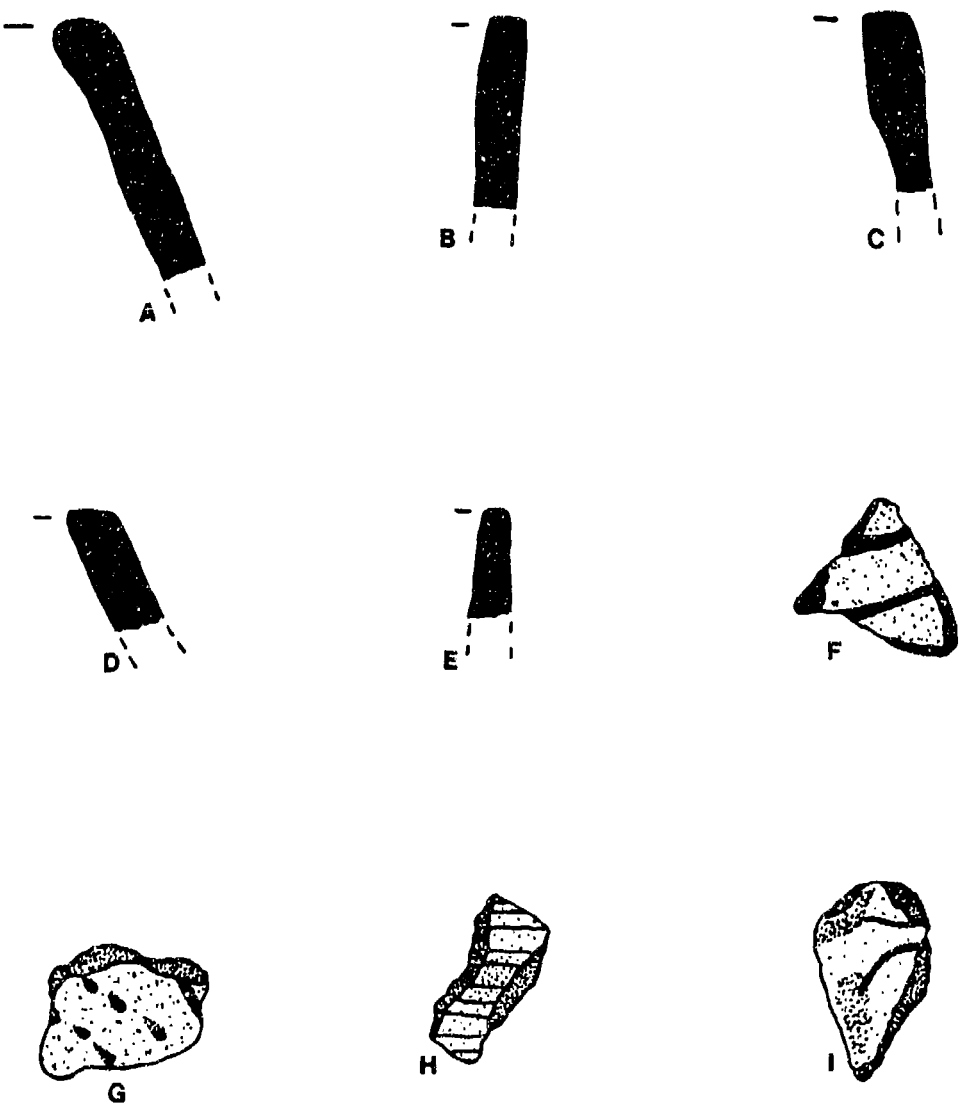

Figure 49. Selected rims and decorated sherds from 16JE223 (Scale 1:1). A) N80 E121, Level B2 (Baytown Plain *var. Cataouatche*); B) N80 E121, Level B2 (Baytown Plain *var. Unspecified*); C) Northernmost Surface Scatter (Baytown Plain *var. Unspecified*); D) Shovel Test N95 E115 (Baytown Plain *var. Unspecified*); E-F) N80 E121, Level B3 (Buras Incised *var. Unspecified*); G) N94 E124.5, Level B2 (Unclassified Incised and Punctated on Baytown Plain *var. Crown Point*); H) N80 E121, Level B2 (Anna Incised *var. Unspecified*); I) N80 E121, Level B2 (Curvilinear Incised).

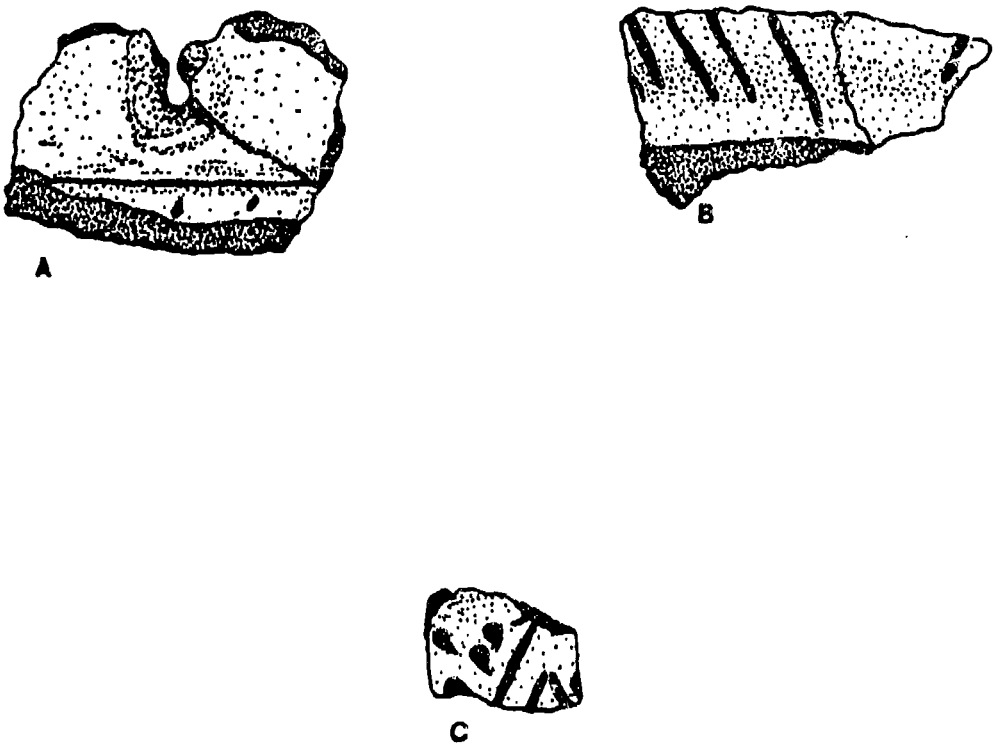

Figure 50. Decorated sherds from 16JE223 (Scale 1:1). A) N80 E121, Level B2-3 (Buras Incised *var. Cataouatche* with crunch lacing hole); B) N84.5 E132, Level B2 (Mazique Incised *var. Unspecified*); C) N94 E124.5, Level B1 (Buras Incised *var. Unspecified*).

Type-Variety Descriptions (Decorated Pottery)

Anna Incised, *var. unspecified* (N=1). One interior incised sherd was recovered from level B2 of unit N80 E121. The incisions were thin and scratchy, forming a series of parallel lines. No design is evident. The paste is close to Baytown Plain, *var. Crown Point*, but is too soft and the temper particles are too large for inclusion in that variety.

Chronology: Mississippi period.

Buras Incised *var. Unspecified* (N=4). Four sherds from levels B2 and B3 of test unit N80 E121 were tentatively identified as variants of this important decorated type. These sherds, which are probably from one vessel, had sloppy, wet paste curvilinear incisions on the shoulder or upper body of grit-grog tempered vessels. The paste is similar to Baytown Plain, *var. Cataouatche*. These sherds are lacking the punctations seen in Buras Incised, *vars. Buras* or *Oyster Road* (Wells et al. 1995), but we cannot be certain if this is a reflection of the small size of the sherds. Buras Incised without punctations has been identified at the Bayou Des Familles site (Wells et al. 1995). Elsewhere on the Gulf Coast and at Moundville, variants of Moundville Incised (the shell tempered contemporary of Buras Incised [Wells et al. 1995]) without punctations (generally identified as Moundville Incised, *var. Carrollton*) are considered to date from the early to middle Mississippi period (Brown and Fuller 1992; Fuller 1994; Fuller and Brown 1992; Steponaitis 1993).

Chronology: Mississippi period.

Mazique Incised, *var. unspecified* (N=3). Three sherds, all from a single vessel, were identified as Mazique Incised. These sherds, which can be joined to form one larger piece, came from the neck of what appears to be a jar with a Baytown Plain, *var. unspecified*, paste. The execution of the design consists of sloppy wet paste incisions forming bands of parallel lines placed at an oblique angle to the rim. The pattern appears to consist of sets of lines with blank areas between the hatched zones. In these sherds, the lines appear to run in opposite directions in the two decorated zones, forming a herringbone pattern with an intervening blank field. There is no published variety of Mazique Incised which comes close to corresponding to this design. Mazique Incised is not common in the coastal zone, and it has not been reported at the Fleming (16JE36), Sims (16SC2), or Bowie (16LF17) sites, or elsewhere where there are significant Mississippi period components.

Unclassified Curvilinear Incised (N=2). Two sherds with wet paste, narrow curvilinear incising were recovered at the Camino site. These sherds may belong to vessels decorated with Buras Incised designs, but they are too small for confident attribution. Both sherds are executed on an unspecified variety of Baytown Plain.

Unclassified Incised (N=3). This group consists of sherds too fragmentary to even identify on the level of type. They are either too small or too eroded in general to determine if lines are curvilinear or rectilinear, although all appear to be rectilinear in this sample. All of these sherds have clay tempered pastes corresponding to Baytown Plain, *var. Cataouatche*.

Unclassified Incised and Punctated (N=6). These six sherds, which almost certainly came from the same vessel, are all quite small. Several of the sherds do not have both incising and punctation on them, but they join sherds which do have both design elements. The basic design, as best as can be reconstructed, consists of converging lines (the fragments are too small to determine if the lines are rectilinear or curvilinear) with punctations in the zones above where the lines converge. Additional punctations may be placed within the area demarcated by the incised lines, but this can not be determined for certain. The paste is a distinctive thin, hard ware with the inside burnished dark black. This paste is characteristic of the best

executed pottery in the region and has been identified as Baytown Plain, *var. Crown Point*. The general design and execution are reminiscent of Buras Incised, but the sherds are too fragmented to tell for certain.

Unclassified Decorated (N=2). Two sherds from the Camino site had some form of surface modification but were too small for adequate determination. One sherd, executed on a thin, hard paste identified as Baytown Plain, *var. Crown Point*, appeared to have a design consisting of a narrow band running between two excised fields. The other sherd was also found on a *Crown Point* paste, but the design could not be identified as the sherd was too small.

Type-Variety Descriptions (Undecorated Pottery)

Addis Plain, *var. Unspecified* (N=6). These sherds consisted of a medium-textured, fairly hard, heterogeneous organic and clay tempered paste. One sherd may have contained some shell which subsequently leached out. Hues run from medium to darker browns. Unlike contemporary sites in the Bayou Des Familles region or areas farther north, such as the Yazoo and Tensas basins, this type is not present in large quantities. Giardino reports that much of the pottery he identifies as *Addis* contains "some sand and have granular surfaces" (1990:94). The sherds we identified as Addis Plain do not contain noticeable quantities of sand.

Chronology: Mississippi period.

Baytown Plain, *var. Cataouatche* (N=69). This is a new variety based on excavated material from the nearby Bayou Des Familles site (Wells et al. 1995). This ware has a moderately thick, medium textured paste with medium to large, angular chunks of clay temper. Sand is a common inclusion, but is not a major constituent of the temper. The surface is often chalky, and hues tend to run the gamut between yellowish-orange and darker browns and grays. Several of the sherds classified to this variety have a gray or orangish slip or wash on the exterior surface.

We have defined *var. Cataouatche* as a late prehistoric variety. We recognize that this variety bears certain resemblances to both *Reed* and *Satartia*, which have been previously reported for the region, but prefer to keep our typology as "clean" as is possible. We suspect that what we identify as *Cataouatche* would subsume these two previously named varieties, and that it represents the "standard" Mississippi period grit-grog tempered ceramic in the Barataria region. Giardino (1990:93-95) notes that some of the sherds he identifies as *Satartia* bear a slip, and that decorated sherds made on this paste include Maddox Engraved and Coles Creek Incised, *var. Hardy*. As for *var. Reed*, Giardino (1990:95) observes that "most of the decorated sherds from 16JE163 are manufactured" on this paste, including Anna Incised, Coles Creek Incised, *var. Hardy*, and "unidentified" zoned incised sherds (probably Buras Incised). In both these instances what Giardino is describing bears considerable similarity to our definition of *var. Cataouatche*. We are compelled to argue that the use of *Reed* and *Satartia* plainware varieties is clearly inappropriate in this context (temporally and spatially) and should be discontinued in future research. The validity of our approach, which might be seen as a "lumpers" version of plainware sorting, will only emerge as more work is undertaken.

Baytown Plain, *var. Crown Point* (N=11). This is a new variety based on excavated materials from the Bayou Des Familles site (Wells et al. 1995). It has a fine, thin, hard paste with small particles of clay temper. Surface is generally quite smooth. Hues tend to be the darker grays and browns. This variety bears some superficial resemblances to the description of *var. Cataouatche*, but in reality, no *Cataouatche* sherd comes close to approximating the quality of this variety. At the Camino site, this is the prominent ware associated with deco-

rated pottery. In some instances the interiors were burnished or polished, which is not a characteristic previously noted for the region.

This variety seems to have no comparable sample at nearby and contemporary sites. In some ways it comes close to the descriptions offered for *var. Jean Lafitte*, but *Crown Point* lacks the sand content which makes *Jean Lafitte* distinctive. Local variations in clay sources and preferences for certain manufacturing techniques may distinguish contemporary sites in the Bayou Des Familles region. Variation in plainware assemblages is evidently a function of real differences in the ceramics, and is also likely a reflection of differences in classification between archeologists. Plainware typologies are notoriously subject to inconsistencies due to variations in local conditions, temper, and clays, as well as how we go about our classification. We are therefore unsurprised that our typology does not precisely match those offered by previous researchers.

Baytown Plain, *var. Jean Lafitte* (N=3). This type is described by Giardino (1989:111, 1990:95-96; see also Wells et al. 1995). It has a moderately hard, fairly thin paste with small chunks of clay temper. Sand is a major constituent of the temper, and this gives eroded sherds a distinctive look and feel. Hues tend to run toward the lighter grays. Slightly chalky surfaces give the thicker sherds a tendency to grade into *var. Cataouatche,* but they are usually separable by sand content and surface texture (Giardino 1990:95).

This variety of Baytown Plain represents an important constituent in the late prehistoric ceramic assemblages at a number of sites in the Bayou Des Familles region. Based on Giardino's analysis of the ceramics from 16JE163 and 16JE164, the variety is clearly at home in the late prehistoric period. It is also present at early historic sites in the area. Giardino identified 20 sherds of *Jean Lafitte* at 16JE216 (1989:Table 12 [on page 111 he says that 15 sherds were classified to this variety]). Aboriginal and early historic European artifacts were recovered together in a number of contexts at this site (Yakubik 1989), but we cannot be certain if they were used at the same time or if the aboriginal materials were incorporated into the historic sites through reuse of midden debris.

Baytown Plain, *var. Unspecified* (N=46). This group is largely made up of sherds too small or anomalous for identification. These consist of grit-grog tempered sherds with a soft, frequently chalky surface. The small size of the sample precludes any real attempt to further subdivide this group.

We do not have much else to work with in terms of the ceramic analysis. There are nine rims in the Camino site aboriginal ceramic collection. Five of these are too small for adequate vessel shape characterization. Two rims indicate the use of nearly straight-walled, deep bowls. One appears to come from a restricted neck jar, and one from a shallow bowl. Lips are generally simple, with little modification beyond being rounded or slightly flattened. One sherd appears to consist of the neck (?) of a jar with a crack repair hole drilled through it. This sherd is unusual because there may have been a depression in the wall of the vessel where the hole was placed. This may have been deliberate, but we cannot be certain at present.

Chronology of the Aboriginal Occupation

The Camino site aboriginal ceramic assemblage is relatively meager and generally non-diagnostic. The few decorated sherds point to a Mississippi period date for the aboriginal component. No clearly historic aboriginal ceramics were recovered, although the possibility exists that Buras Incised could extend into the historic period (Wells et al. 1995). Elsewhere in the Lower Mississippi Valley, the type Anna Incised is generally found in earlier Mississippi period components (Brown 1985b; Hally 1972; Williams and Brain 1983). The rarity of this type in the coastal zone makes us hesitant to advance an early date for this type here,

however. Anna was evidently present at Fleming (Holley and DeMarcay 1977), and has been recovered in small amounts at other sites in the Bayou Des Familles region (Wells et al. 1995). Sherds identified as Buras Incised also point to a Mississippi period date for the aboriginal occupation. Once again, however, we lack sufficient specificity beyond that general chronology. The sherds from Camino were simply too small for varietal identification which is crucial with a long-lived type such as Buras Incised. The possibility of a variety of Buras Incised similar to Moundville Incised, *var. Carrollton*, may be taken to suggest the possibility of an early to middle Mississippi period occupation. Considerably larger samples of these varieties will be needed, however, before secure culture historical inferences are possible. The single sherd (three joined sherds, really) of Mazique Incised is also not much help beyond the date range already suggested. Mazique is rare in the eastern coastal zone to begin with, and its presence here is not much help since this variant is clearly not stylistically similar to known varieties elsewhere in the Lower Mississippi Valley.

One other possible chronological marker was observed in the Camino site assemblage. Sandy textured plainwares were very rare at the site. Only three sherds of Baytown Plain, *var. Jean Lafitte*, were recovered, comprising 2.5 percent of the plain pottery (4 percent of the classified plain pottery). At the Bayou Des Familles site, which is securely dated to the mid-fifteenth century (Kidder 1995), the percentage of *Jean Lafitte* rises to 13 percent of the plain pottery (16 percent of the classified plain pottery) (Wells et al. 1995). At site 16JE216, which appears to be a fully historic occupation with contemporary Indian pottery, the percentage of *Jean Lafitte* is 63 percent of the plain pottery (all of which could be classified to a variety) (Giardino 1989). In addition, eight sherds of Maddox Engraved from 16JE216 were identified as a new variety, named *Canary*, based on the fact that their paste contained a "much higher" quantity of sand "than is normal for the type" (Giardino 1989:108). These figures suggest then that there may be an important temporal trend evident in the plain pottery. Sand as an additive to the temper of local plain pottery seems to increase quite significantly through time. If this trend is a real one, and not some artifact of our classification, then it would lend further support for the notion that the aboriginal component at the Camino site dates to the early part of the Mississippi period.

Two radiocarbon dates were run on *Rangia cuneata* shell excavated from levels D1 and D2 in test unit N92 E120.5. There was insufficient carbonized plant material to allow us to run dates on other materials. The dates were submitted to Beta Analytical in Coral Gables, Florida. Each dated sample consisted of a minimum of 50 grams of shell. Each sample was pretreated using the "acid etch" technique. Shells were first washed in de-ionized water and then crushed. The resulting sample was then subjected to repeated HCL etches to remove secondary carbonate compounds. Each sample was measured for $^{13}C/^{12}C$ ratios as well as ^{14}C ages. The $^{13}C/^{12}C$ ratios are used to normalize the sample and to provide a correction for global and local geographic reservoir effects (Stuiver and Braziunas 1993). These $^{13}C/^{12}C$ corrections provide the means of arriving at the "Conventional" ^{14}C age.

Shell samples are notoriously subject to difficulties in interpretation due to variations in local and regional carbon reservoir variations. Reservoir correction factors are largely theoretical, and local variations are real, highly variable, and dependent on sample provenience. Aten (1983) suggests that there should be a correction factor built into *Rangia* dates obtained from the Trinity River Delta region of eastern Texas due to calcium carbonate enrichment of river water caused by its flowing through limestone sediments. This source of enrichment is not likely in the coastal zone of eastern Louisiana, although local reservoir effects are still subject to variation associated with water borne carbonates. A further source of reservoir variation may be associated with low rates of surface water turnover in shallow and sluggish estuarine and riverine environments (Berger et al. 1966).

The radiocarbon dates for the Camino site are reported in Table 56 and are graphically shown in Figure 51. Both the table and the figure compare the Camino dates to the better dated and spatially proximate Bayou Des Familles site. The Camino site dates are arranged in stratigraphic order, from lowest to highest. Note that the dates are stratigraphically reversed. The calibration curve used here is the Pretoria Calibration Procedure (Vogel et al. 1993). Conventional radiocarbon ages in Table 56 are given with their associated calibration results at both one and two sigma age ranges. The recommended calibration age range to be used for interpretation is the two sigma range (providing for 95% probability that the date actually falls in the estimated age range).

The radiocarbon dates do not provide any refinement of the basic chronology of the aboriginal component. Although the dates overlap at cal. AD 1270, their age spans suggest that they are not contemporary dates. The general age range, based on a reading of the two sigma age ranges, suggests an occupation from ca. 1020 to 1405. It is possible that there are two components represented, but that post-depositional mixing may have been responsible for the stratigraphic reversal of the dates. Alternately, the dates may be essentially contemporary, and the cal. AD 1270 midpoint could be a useful approximation of the site date. Such a conclusion would not be out of line with the ceramic data which point to a middle Mississippi period occupation in the twelfth to fourteenth centuries. These dates generally support the contention that the Camino site is essentially contemporary with the Bayou Des Familles site, although the aboriginal occupation at Camino may be slightly earlier.

Summary

In summary, the aboriginal ceramic assemblage from the Camino site is meager and largely nondiagnostic. The only temporally diagnostic ceramics point to a Mississippi period occupation, presumably in the period ca. A.D. 1200-1600. It is not possible to make a confident cultural identification of these Indians, except to note that they were likely affiliated with the Barataria or Bayou Petre phase populations inhabiting the area in the Mississippi period. Although the plainware is not especially chronologically helpful, we can note that there is a great deal of similarity between the pottery at the Camino site and that found at the nearby Bayou Des Familles site. Based on the ceramics and radiocarbon dates from Camino, we would suggest that the site is contemporary with, or just slightly earlier than the Bayou Des Familles site. More than one occupation may be represented by the shell midden deposits. The ceramic continuity, however, suggests that there was little change in the basic population through time in this region.

No certain historical aboriginal ceramics could be identified at the Camino site. It appears that the bulk of the aboriginal pottery here, if not all of it, was associated with a minor, possibly temporary or transient, prehistoric occupation centered on the small shell midden. Subsequent surface disturbance, probably associated with the historic occupation of the site, has spread the aboriginal pottery across the site and may account for its association with historic artifacts in many test units.

Table 56. Radiocarbon Dates from 16JE223 and 16JE218.

Site	Lab No.	Material	Provenience	Conventional Radiocarbon Age (BP)	cal AD (2σ)	cal AD (1σ)	cal AD Intercept	$^{13}C/^{12}C$
16JE223	Beta-80608	*Rangia* shell	N92 E120.5 Level D1	890 ± 60	cal AD 1020 to 1270	cal AD 1040 to 1225	cal AD 1175	-4.6
16JE223	Beta-80609	*Rangia* shell	N92 E120.5 Level D2	670 ± 50	cal AD 1270 to 1405	cal AD 1285 to 1315, cal AD 1345 to 1390	cal AD 1300	-6.2
16JE218	Beta-77000	*Rangia* shell	S131 E109 Level E	660 ± 50	cal AD 1275 to 1410	cal AD 1290 to 1325, cal AD 1340 to 1390	cal AD 1300	-6.4
16JE218	Beta-74918	*Rangia* shell	S132 E108 Level E	650 ± 60	cal AD 1270 to 1420	cal AD 1290 to 1400	cal AD 1310	-5.8
16JE218	Beta-74914	*Rangia* shell	S119 E102 Level E	610 ± 60	cal AD 1280 to 1430	cal AD 1300 to 1410	cal AD 1320 cal AD 1340 cal AD1390	-5.9
16JE218	Beta-76999	*Rangia* shell	S120 E114 Level F	590 ± 50	cal AD 1295 to 1430	cal AD 1310 to 1365, cal AD 1375 to 1415	cal AD 1400	-6.2
16JE218	Beta-74913	*Rangia* shell	S117 E119 Level F	570 ± 60	cal AD 1290 to 1440	cal AD 1310 to 1350, cal AD 1380 to 1420	cal AD 1410	-5.0
16JE218	Beta-74915	*Rangia* shell	S123 E100 Level E	530 ± 60	cal AD 1310 to 1460	cal AD 1400 to 1440	cal AD 1420	-6.0
16JE218	Beta-74912	*Rangia* shell	Feat. 30A	500 ± 60	cal AD 1320 to 1350, cal AD 1390-1490	cal AD 1410 to 1450	cal AD 1430	-6.1
16JE218	Beta-74916	*Rangia* shell	S125 E99 Level E	460 ± 60	cal AD 1400 to 1520, cal AD 1570-1630	cal AD 1420 to 1470	cal AD 1440	-5.4
16JE218	Beta-74917	*Rangia* shell	S126 E111 Level O	460 ± 60	cal AD 1400 to 1520, cal AD 1570-1630	cal AD 1420 to 1470	cal AD 1440	-6.1
16JE218	Beta-74911	*Rangia* shell	Feat. 12	430 ± 60	cal AD 1410 to 1640	cal AD 1430 to 1500	cal AD 1450	-6.7

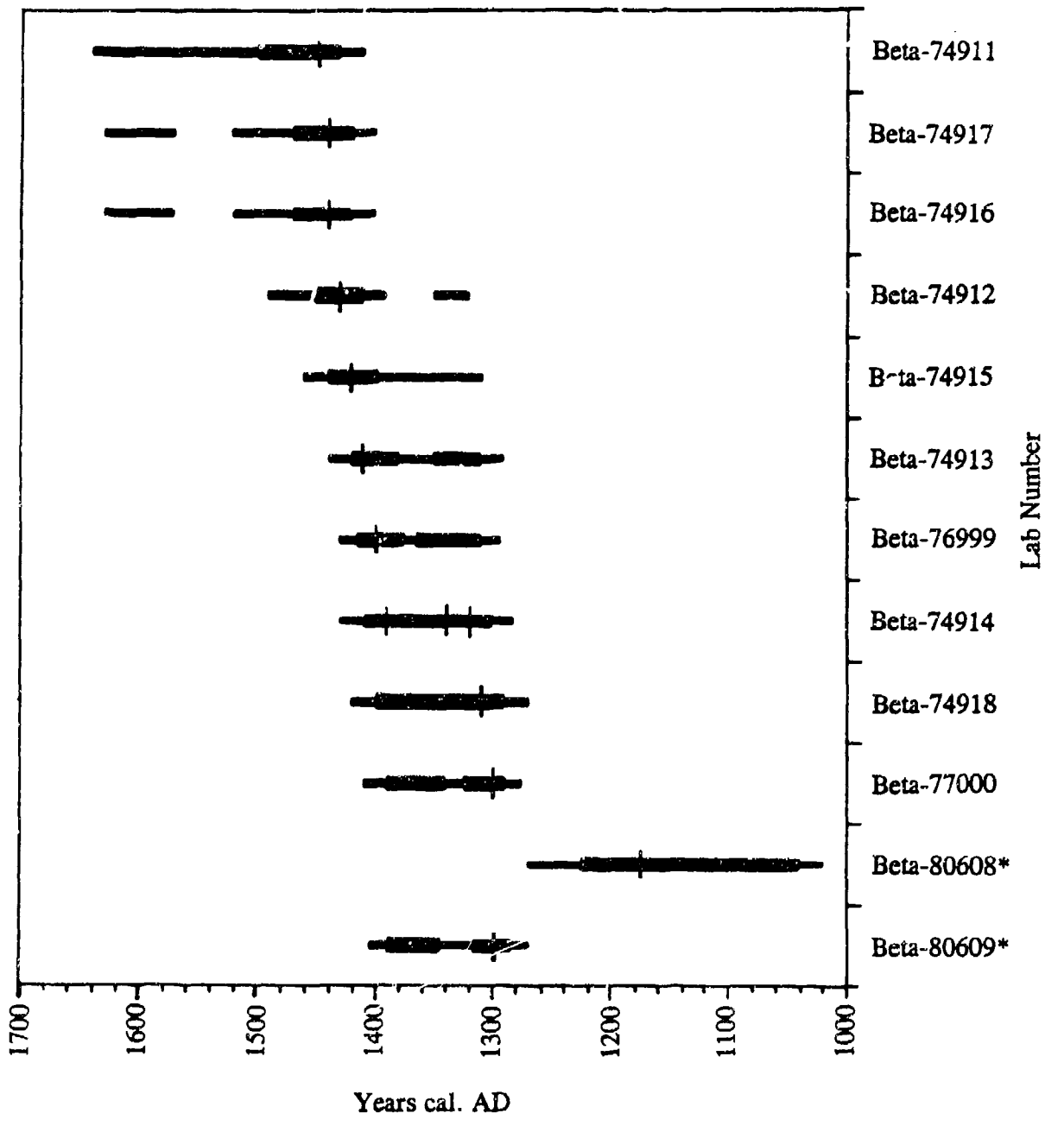

Figure 51. Calibrated radiocarbon dates for the Camino site (16JE223) and Bayou Des Familles (16JE218) site. The Camino site dates are designated by asterisks. Horizontal lines mark the calibrated radiocarbon intercept(s); thin vertical bars mark the 2 σ age ranges while wide vertical bars indicate 1 σ age ranges.

CHAPTER 12
ARCHEOBOTANICAL REMAINS FROM THE CAMINO SITE

Introduction

Archeological plant remains from the Camino site (16JE223) were analyzed by Gayle J. Fritz at the Paleoethnobotany Laboratory, Washington University in St. Louis, during May and June, 1995. Phase I excavations at the site were conducted by Earth Search, Inc., in January 1995, and the flotation samples processed during that season of fieldwork yielded the carbonized plant remains reported here. Dr. Fritz did not participate in either the fieldwork or the flotation recovery process.

Three occupational episodes were recognized by the archeologists: a late prehistoric (Mississippi period) shell midden; a late-eighteenth-century occupation believed to be the remnants of Canary Islanders (*Isleños*) who had been resettled by the Spanish colonial government in 1779; and an early-nineteenth-century occupation by people of unknown affiliation.

Methods of Analysis

Thirty-three flotation samples, each consisting of a Light Fraction and a Heavy Fraction, were sent to Washington University in St. Louis (Tables 57 and 58). In addition, a few charcoal pieces were picked by hand from 16 excavation levels (Table 59). Each individual Light Fraction and Heavy Fraction was weighed and then passed through a series of geological sieves with mesh sizes ranging from 4.75 mm to 0.355 mm. Fragments larger than 2.0 mm in size were completely sorted according to category, and each type of carbonized plant material was counted and weighed (Table 58). Items other than carbonized archeobotanical remains were also separated according to category if they were larger than 2.0 mm. The non-archeobotanical categories from the Camino site include bone, snail, stone/soil, and uncarbonized plant parts such as stems, modern seeds, leaves, and rootlets. Fragments smaller than 2.0 mm were carefully scanned for acorn shell, seeds, maize, and any archeobotanical material not represented in the larger-than-2.0 mm sieves of that sample. The "Residue" column in Table 58 consists of fragments smaller than 2.0 mm but larger than 0.7 mm from which acorn shell, seeds, maize, and other previously unrepresented archeobotanical categories had been pulled.

Objects were examined through a low power (7x-50x) Wild M-8 binocular microscope and weighed to the nearest 0.01 g on an electronic OHaus scale, rounding up to 0.01 g if an object failed to register any weight at all. Identifications were made with the aid of modern reference collections and standard seed identification manuals (Delorit 1970; Delorit and Gunn 1986; Martin and Barkley 1961; Montgomery 1977).

Contents of the Flotation Samples

Flotation samples from the Camino site yielded carbonized wood charcoal, cane stem, acorn shell, maize, seeds, fungal matter, and unknown material. A summary of the archeobotanical assemblage is presented in Table 57, and a complete breakdown by sample is given in Table 58.

Wood Charcoal and Cane Stem. Wood charcoal is present in all 33 flotation samples (100% Ubiquity), with a total count of 2,768 fragments larger than 2.0 mm and total weight of 36.79 g. Although wood is clearly more abundant than any other carbonized plant type, density in most samples is low. Two Light Fractions contain no wood whatsoever. The average site density of fewer than 10 fragments of wood per liter of soil floated demonstrates the

Table 57. Summary of Flotation-Recovered Archeobotanical Remains from the Camino Site.

Number of Flotation Samples	33 (1 LF and 1 HF per sample)
Total Volume of Soil Floated	330 liters (10 l per sample)
Total Count of Wood Charcoal	2,768 fragments
Total Wt. of Wood Charcoal	36.79 g
Ubiquity (% Presence) of Wood	100% (But 2 LF's lack wood)
Total Count of Cane Stem	4 fragments
Total Weight of Cane Stem	0.04 g
Ubiquity of Cane	12.1%
Total Count of Acorn Shell	1
Total Weight of Acorn Shell	0.01 g
Ubiquity of Acorn	3.0%
Total Weight of Maize	0.37 g (+ 0.13 g of ?? maize)
Ubiquity of Maize (excluding questionable fragments)	45.5%
Ubiquity of Maize (including questionable fragments)	78.8%
Total Count of Cupules	34 (+ 28 poss. cupule frags)
Total Count of Kernel frags	10
Total Count of Glumes	1 (+ 1 possible glume)
Total Seed Count	20 (+ 2 Unidentifiable frags)
Ubiquity of Seeds	21.2%
Total Count of Unknown frags	107
Total Weight of Unknown frags	0.77 g
Ubiquity of Unknowns	72.7%
Total Count of Fungal Matter	345
Total Weight of Fungal Matter	2.98 g
Ubiquity of Fungal Matter	72.7%

Table 58. Archeobotanical Remains from the Camino Site.

Provenience	Lot #	FS #	LF/	Wood	Wood	Cane	Cane	Acorn	Acorn	Maize	Cupule	Kernel	Glume	Seed	Unid. seed
			HF	Ct.	Wt.	Ct.	Wt.	Ct.	Wt.	Wt.	Ct.	Ct.	Ct.	Ct.	frag. Ct.
					(g)		(g)		(g)	(g)					
Feature 1:	29	13	LF	162	2.20	1	0.01			0.01	1		1	4	
			HF	50	1.00					0.01	2				
	48	35	LF	25	0.19									5	
			HF	75	1.23					0.02	1	1			
	69	48	LF	43	0.31										
			HF	33	0.83					0.01?	2?				
	80	21	LF	137	1.36					0.03	3?+ 3	1		3	
			HF	236	3.05					0.02	1	1		1	
Feature 2:	38	27	LF	42	0.36					0.01?	2?				
			HF	130	3.17										
Non-Features	5	5	LF	1	0.01										
			HF	186	2.27										
	6	6	LF	10	0.11										
			HF	52	0.60					0.01	1				
	7	7	LF	119	1.01	1	0.01	1	0.01	0.01?	1?				
			HF	77	0.74										
	8	8	LF	1	0.01										
			HF	8	0.06					0.01	1				
	17	12	LF	6	0.04										
			HF	10	0.11										
	19	14	LF	8	0.04					0.01	1				1
			HF	162	2.07	1	0.01			0.05	8	1			
	20	15	LF	2	0.01										
			HF	17	0.26					0.01	1				
	22	17	LF												
			HF	12	0.55										
Locus A,	23	18	LF	1	0.01					0.01	1				
shell lens			HF	26	0.57					0.03	1?	2			
	24	19	LF	46	0.53										
			HF	157	1.79					0.02?	5?				
Locus A,	26	20	LF	1	0.01										
shell lens			HF	12	0.13					0.02	1	1			
	32	22	LF	7	0.13					0.01?	1?				
			HF	38	0.60										

Table 58. Archeobotanical Remains from the Camino Site.

Provenience	Lot #	FS #	LF/	Wood	Wood	Cane	Cane	Acorn	Acorn	Maize	Cupule	Kernel	Glume	Seed	Unid. seed
			HF	Ct.	Wt.	Ct.	Wt.	Ct.	Wt.	Wt.	Ct.	Ct.	Ct.	Ct.	frag. Ct.
					(g)		(g)		(g)	(g)					
	33	23	LF	8	0.04										
			HF	8	0.08										
	34	24	LF	42	0.33					0.01?	1?			1	1
			HF	16	0.16										
	35	25	LF	99	0.85					0.01?	1?				
			HF	97	1.15										
	37	27	LF	2	0.02					0.01?			1?		
			HF	2	0.02										
	41	29	LF	28	0.22					0.01?	2?			2	
			HF	108	1.83					0.01	2? + 2				
	44	32	LF	24	0.13					0.01	3? + 1			3	
			HF	11	0.07										
	47	34	LF	11	0.07					0.01	2				
			HF	12	0.06					0.01	2				
	55	39	LF	12	0.08					0.01	1				
			HF	16	0.14										
	56	40	LF	8	0.10										
			HF	4	0.10										
	57	41	LF	4	0.02										
			HF	55	0.59										
	58	42	LF	10	0.06									1	
			HF	16	0.21										
	66	46	LF	64	0.50										
			HF	50	1.09					0.01?	2?				
	71	49	LF	17	1.69	1	0.01								
			HF	62	0.85					0.05	3				
	76	50	LF	1	0.01										
			HF	25	0.31					0.01?	1?				
	77	51	LF	2	0.01										
			HF	34	0.38					0.01?	1?				
	78	52	LF												
			HF	28	0.24					0.03		3			
TOTALS:				2768	36.79	4	0.04	1	0.01	13? 0.37	28? 34	10	1? 1	20	2

Table 58. Archeobotanical Remains from the Camino Site.

Provenience	Lot #	FS #	LF/	Unkn.	Unkn.	Fungal	Fungal	Uncarb.	Bone	Bone	Snail	Snail	Residue
			HF	Ct.	Wt.	Ct.	Wt.	Wt.	Ct.	Wt.	Ct.	Wt.	Wt.
					(g)		(g)	(g)		(g)		(g)	(g)
Feature 1:	29	13	LF	5	0.04	1	0.01	6.66					4.31
			HF	1	0.02			0.08					0.15
	48	35	LF	1	0.01	1	0.01	1.61					1.04
			HF	2	0.01			0.17	3	0.04			0.33
	69	48	LF	7	0.03			1.69					1.42
			HF					0.10					0.55
	80	21	LF	8	0.06	1	0.01	6.91	2	0.02			5.18
			HF	11	0.08			0.72					1.60
Feature 2:	38	27	LF					0.79					1.17
			HF					0.19					0.35
Non-Features	5	5	LF					1.66					1.53
			HF	4	0.04	2	0.02	1.00					2.36
	6	6	LF			1	0.01	3.02			1	0.01	1.90
			HF			1	0.02	0.18					0.36
	7	7	LF	3	0.01			4.69					3.68
			HF					0.15					0.56
	8	8	LF					1.56					0.80
			HF			20							0.06
	17	12	LF			8	0.16	8.60					4.70
			HF			6	0.07						0.11
	19	14	LF	3	0.02	6	0.02	2.71	2	0.01			1.27
			HF	5	0.03		0.03	0.34					0.76
	20	15	LF			4		4.82					4.01
			HF			1	0.03	0.31					0.38
	22	17	LF			23	0.01	1.72					1.30
			HF				0.17						0.12
Locus A,	23	18	LF					3.31					1.29
shell lens			HF	4	0.02	1		0.50					0.58
	24	19	LF	2	0.01	1	0.01	3.53	4	0.04	1	0.01	2.47
			HF	4	0.03		0.01	0.60					0.79
Locus A,	26	20	LF					2.50					0.84
shell lens			HF	2	0.01	7		0.23					0.39
	32	22	LF			9	0.08	8.53					5.82
			HF			78	0.14	0.23					0.48

Table 58. Archeobotanical Remains from the Camino Site.

Provenience	Lot #	FS #	LF/	Unkn.	Unkn.	Fungal	Fungal	Uncarb.	Bone	Bone	Snail	Snail	Residue
			HF	Ct.	Wt.	Ct.	Wt.	Wt.	Ct.	Wt.	Ct.	Wt.	Wt.
					(g)		(g)	(g)		(g)		(g)	(g)
	33	23	LF	2	0.01		0.40	28.90			2	0.01	16.68
			HF			1		0.48			2	0.02	0.11
	34	24	LF	2	0.01	1	0.01	4.01	2	0.01			2.00
			HF			4	0.01	0 03					0.06
	35	25	LF			2	0.03	6.43					9.54
			HF	1	0.01		0.01	0.39					0.48
	37	27	LF	3	0.07			1.46					0.71
			HF			16							0.01
	41	29	LF	5	0.02	6	0.07	6.21	1	0.16			3.02
			HF				0.03	0.41					0.63
	44	32	LF	1	0.01			2.98					1.68
			HF	1	0.01								0.06
	47	34	LF			1		2.11					1.85
			HF	3	0.03	58	0.01						0.06
	55	39	LF			7	0.80	11.40					6.39
			HF	2	0.01	6	0.10	0.42					0.27
	56	40	LF	1	0.01	1	0.01	11.65					7.97
			HF	1	0.01	3	0.01						0.01
	57	41	LF			6	0.06	2.92					3.19
			HF	2	0.02	2	0.05	0.22					0.54
	58	42	LF				0.05	13.45					4.80
			HF			46							0.03
	66	46	LF	7	0.05	1	0.41	5.83					2.60
			HF			1	0.01	0.19					0.23
	71	49	LF	8	0.03		0.01	3.82	3	0.01	1	0.01	3.85
			HF	3	0.02	4		0.01					0.26
	76	50	LF			6	0.02	5.90					3.23
			HF	1	0.01		0.06	1.17					0.79
	77	51	LF			2		3.13					1.65
			HF	2	0.02		0.01	0.43					0.27
	78	52	LF					0.52					0.28
			HF					0.48					0.34
TOTALS:				107	0.77	345	2.98	184.06	17	0.29	7	0.06	126.25

Table 59. Hand-Picked Plant Remains, Camino Site.

Provenience	Lot #	Level	WOOD Ct.	WOOD Wt. (g)	Persimmon Seed Ct.	Persimmon Seed Wt.	Fungal Ct.	Fungal Wt. (g)	Stone Ct.	Stone Wt. (g)
N83.8 E130	6	B1	4	0.65						
N84.5 E117.5	9	B3	1	0.12						
N84.5 E131	19	B1	5	0.44						
N84.5 E131	24	B2			1	0.13				
N85.1 E123	32	B1	2	0.11						
N85.1 E123	34	B2	2	0.11						
N94 E124.5	37	B2	1	0.04						
N84.5 E132	41	B1	6	0.57						
N84.5 E132	44	B2	5	0.53						
N86 E129	57	B1	6	1.09			4	0.30		
N83.8 E130	65	B1	1	0.10						
N83.8 E130	66	B2	1	0.06					1	1.35
N83.8 E130	69	B3	12	2.07						
N86 E129	71	B1	6	0.57						
N80 E121	76	B1	1	0.06						
N80 E121	77	B2	2	0.25						
TOTALS			55	6.77	1	0.13	4	0.30	1	1.35

overall scarcity of archeobotanical remains at this site. Moreover, Table 58 shows that most samples have more wood in the Heavy Fraction than Light Fraction, probably due to the necessity of pretreating soil matrix with a deflocculant prior to flotation in the SMAP-type apparatus. Deflocculation is a virtual necessity in heavy clay soils such as those at the Camino site. However, charcoal can become waterlogged during deflocculation and therefore fail to enter the Light Fraction.

Four samples (12.1% Ubiquity) contain tiny fragments of cane stem (*Arundinaria gigantea*), with no more than one fragment per sample. The native bamboo that we call giant cane was (and still is) utilized as a construction material, for domestic implements and furnishings, and for hunting and fishing tools (Swanton 1979).

Acorn Shell. Acorn shell (*Quercus* sp.) is the only type of nut represented at the Camino site, and it occurs in a carbonized state in only one sample, with a total count of one fragment weighing less than 0.01 g. Uncarbonized acorn shell was observed in a few samples, but only in low frequencies. At this time, it does not appear as if the late prehistoric or historic occupants of the levees along Bayou des Familles relied heavily on acorns. Excavations of the Plaquemine component at 16JE218, near the Camino site, failed to yield any acorn shell (Fritz 1995). This contrasts dramatically with the situation upstream in Tensas Parish, where acorn appears to have been a primary source of carbohydrates as early as A.D. 200, continuing to be heavily utilized at least until European contact (Fritz and Kidder 1993; Fritz 1994).

Maize. Fragments of maize cobs and/or kerneis are present in at least 15 samples (45.5% Ubiquity). Maize from the Camino site was divided into two groups: fragments that can be classified with relative confidence, and fragments that are questionable. If questionable fragments are included, 26 samples contain maize (78.8% Ubiquity). The cob is represented by 34 cupules and one glume, none of which is entire enough to be measured for width. An additional 28 cupule fragments and one glume fall into the questionable group. A total count of 10 maize kernel fragments is distributed across six samples. Fragmentary archeobotanical specimens such as these cannot be assigned to any particular variety or "race" of maize.

It is very unusual to find such a high number of questionable cupule fragments. In this case, it seems possible that at least one type of maize deposited by Camino site occupants is morphologically different from the prehistoric Southeastern maize most commonly encountered. This might be true of maize grown by either eighteenth-century *Isleños* or early-nineteenth-century Euro-americans. White Southern farmers favored types of Mexican dent maize such as the Tuxpeno race (Brown and Anderson 1948). One characteristic of the questionable cupule fragments from the Camino site is the extreme hardness of the lip and wing areas and shininess of the interior cup region. The highly indurated cobs of Southern Dent maize types or their Mexican Dent ancestors could produce harder, shinier cupules than do "native" North American types of maize.

Alternatively, the questionable fragments may not be maize at all, but they might be pieces of some undulating plant part such as peach pit or walnut shell. If so, it is unfortunate (and a bit surprising) that none of the fragments is larger than a single cupule and therefore recognizable as this possible other substance.

Maize is relatively well represented at the site even without the questionable specimens. It is clearly the most abundant type of plant food, as was the case at 16JE218, the nearby Bayou Des Familles site that has a slightly later Mississippi period occupation. Inhabitants

Table 60. Seeds from the Camino Site.

	Feature 1							
	FS13	**FS21**	**FS35**	**FS14**	**FS24**	**FS29**	**FS32**	**FS42**
Persimmon	1							
Prob. Cyperaceae (cf. *Carex*)	2	2					1	
Prob. Polygonaceae	1				1			
Rubus								1
cf. *Astragalus*		1						
Roundish/Dense			1			1		
Very small, Oval-shaped			2				2	
Large starchy Seed or Fruit			1					
Unidentified		1	1			1		
Unidentifiable Seed Fragment				1	1			
Total	**4**	**4**	**5**	**0/1**	**1/1**	**2**	**3**	**1**

during any or all of the three occupation episodes at the Camino site could have cultivated and consumed maize.

Seeds. The flotation samples yielded a total of 20 seeds and two unidentifiable seed fragments (Table 60). The most abundant seed type, with a total of five specimens distributed across three samples, appears to belong to the sedge family (Cyperaceae), closely resembling members of the genus *Carex*. The five seeds from the Camino site are faintly trigonous, ranging in length from 1.6 mm to 1.9 mm and in width from 1.1 mm to 1.5 mm. The second most common seed taxon is a very small unidentified type that occurred in two Light Fractions. These seeds are symmetrically oval in planar view, ranging from 0.9 mm to 1.1 mm in length and 0.5 mm to 0.6 mm in width. They are flattish and lenticular in cross section, with sharp margins.

Two samples include one specimen each of probable Polygonaceae family members. One resembles sharply trigonous achenes in the genus *Rumex*, with dimensions of 1.8 x 1.2 mm. The second resembles more closely achenes in the genus *Polygonum* that are also trigonous, but less sharply angled. This specimen measures 1.5 x 1.4 mm.

Native fruits are represented by a single persimmon (*Diospyros virginiana*) seed coat fragment and a single blackberry or raspberry or dewberry seed (*Rubus* sp.). One seed conforms to the shape of milk vetches (*Astragalus* sp.), but is smaller than most, with a diameter of only 1.0 mm.

Two specimens fall into an "unidentified dense-and-roundish" category. Both measure 2.5 x 2.2 mm. Four more seeds could not be identified. One -- from Lot 48/FS35 -- is a large starchy seed or possibly a fleshy fruit with seeds concealed inside the pulp, measuring 9.8 x 5.3 mm. The second, also from Lot 48/FS35, is a tiny, reticulate spindle-shaped seed measuring 1.0 x 0.5 mm. The third, from Lot 80/FS21, is a hemispherical cotyledon 2.2 mm in diameter, too poorly preserved to be identifiable. The fourth is flattish and vaguely crescent- or half-moon-shaped, measuring 1.3 x 0.7 mm.

More than half of the carbonized seeds (13 out of 20) come from three of the four flotation samples taken from the anomaly designated Feature 1, which was later determined to be a tree root disturbance. No general pattern of seed use is reflected. Various sedges have edible or medicinal plant parts, as do members of the Polygonaceae family. Considering the low seed density, however, it seems possible that many of these specimens were carbonized as a result of background "seed rain" or perhaps during field preparation activities. If most of the seed deposition resulted from subsistence or another form of direct plant use, higher counts of persimmon and other fruits such as grapes would be expected. Many of the flotation samples from this site included uncarbonized grape (*Vitis* spp.), maypops (*Passiflora incarnata*), pokeweed (*Phytolacca americana*), and *Rubus* seeds, making the scarcity of carbonized economic seed types more notable.

Fungal Matter. Flotation samples from the Camino site are rich in fungal bodies, with a total of 345 fragments larger than 2.0 mm weighing 2.98 g and distributed across 24 samples (72.7% Ubiquity). Most are black and appear fully charred, but several are brownish in spots and may not be very old. Fungal matter is frequently present in flotation samples and is generally considered to have been incidentally carbonized along with firewood. There is usually far less fungal matter per sample, however. High counts were not present at 16JE218, for example,

where only four out of 26 samples contained fungal bodies, and total weight was 0.05 g (Fritz 1995).

Uncarbonized and Non-Plant Material. Modern, uncarbonized plant parts are present in all Camino site samples, forming the bulk of most Light Fractions and weighing a total of 184.06 g. Small pieces of stone, hardened soil, or sherd weigh a total of 5.71 g. Seventeen tiny bone fragments from seven samples weigh 0.29 g, and seven snails from five samples weigh 0.06 g. Total weight of Residue (material in fractions smaller than 2.0 mm and larger than 0.71 mm, from which relevant objects have been pulled) is 126.25 g

Hand-Picked Plant Remains

Charred material was bagged separately during the excavation of 16 levels (Table 59). All but six of these 61 specimens are wood charcoal, weighing a total of 6.77 g. One whole persimmon seed came from Level B2 of Unit N84.5/E117.5. Four fungal pieces came from Level B1 of Unit N86/E129. The last particle is a small, dark gray rock.

Discussion

It is difficult to interpret the significance of archeobotanical remains from contexts that may reflect the mixing of three very different cultural occupations, each of which was relatively insubstantial. None of the taxa or the proportions in which they are represented point to a drastically different type of plant use than that at the late prehistoric Bayou Des Familles site. If any or all of the maize fragments from the Camino site date to the Mississippi period occupation, it would indicate that another plot of land along this levee was utilized for specialized, possibly seasonal cultivation of maize. However, as at 16JE218, the extreme dominance of maize may not accurately reflect general subsistence diversity. A Plaquemine site with longer-term occupation and higher density of carbonized plant remains will need to be studied before we can begin to assess the overall importance of various types of plant foods along the Louisiana coast.

A similar study of plant use at a single component, late-eighteenth-century *Isleño* site would also be valuable. Documentary research might reveal the types of maize grown by these families, but comparison of archeobotanical fragments will be necessary to determine if harder cobs were present that could produce the questionable fragments encountered in the Camino site assemblage. Fruits and grains from the Old World or West Indies might also have been introduced by the Canary Islanders, but none of these were present in recognizable fragments at 16JE223.

The age and possible cultural significance of the ubiquitous fungal matter at the Camino site deserves further consideration. Some, and possibly most, of the fragments may be modern, and those dating to one or more of the archeological occupations may reflect incidental deposition of fungus growing on dead tree branches or trunks. A specialist in ethnomycology, however, might be able to determine which taxon or taxa are represented in these samples and whether or not people would have gathered these substances for food or other purposes. Heavy use of mushrooms and tree fungi by the *Isleños*, for example, might reflect a cultural preference or, alternatively, underscore their economic plight and lack of more desirable foods.

The archeobotanical assemblage from the Camino site raises interesting questions about late prehistoric and historic plant use by past inhabitants of Gulf Coastal Louisiana. Unfortunately, these questions will have to be answered when more substantial and unmixed deposits are excavated.

CHAPTER 13
VERTEBRATE FAUNAL REMAINS FROM THE CAMINO SITE

Vertebrate faunal materials from 16JE223 were examined using standard zooarcheological methods. All identifications were made by Charlene Keck using the comparative skeletal collection of the Zooarcheological Laboratory, University of Georgia. Material from the current investigation was separated into three groups for analytic purposes. The first group included bone recovered in transect Shovel Test N75 E190. The second group consisted of the faunal material recovered from 16JE223 other than the Stratum D material. The third group was restricted to those faunal remains that were collected from the *Rangia* midden at the site (Stratum D). Very little identifiable material was present in the site collection.

Bones of all taxa were counted (Number of Individual Specimens [NISP]) and weighed to determine the relative abundance of the species identified. Minimum Number of Individuals (MNI) was estimated from paired elements and age. In calculating MNI, faunal materials from all excavation units were combined. While MNI is a standard zooarcheological quantification medium, the measure has several problems. MNI is a measure which emphasizes small species over large ones. This is easily demonstrated by a hypothetical sample which consists of four squirrels and only one deer. While four squirrels represent a larger number of individuals, one deer will supply substantially more meat. A further problem with MNI is the assumption that the entire individual was utilized at the site. From ethnographic evidence we know that this was not necessarily the case, particularly in regard to larger individuals and for animals utilized for special purposes (Thomas 1971; White 1953). This is an especially relevant issue when dealing with historic samples where processed meats may have been utilized. Additionally, MNI is influenced by the manner in which data from the archeological proveniences are aggregated during analysis. The aggregation of separate samples into one analytical whole (Grayson 1973), allows for a conservative estimate of MNI while the "maximum distinction" method, which is applied when analysis discerns discrete sample units, results in a much larger MNI. Furthermore, some elements are simply more readily identified than others and the taxa represented by these elements may appear more significant in the species list than they were in the diet.

Identifiable material from Shovel Test N75 E190 consisted of a left femur of a nutria (*Myocastor coypus*) (Table 61). This specimen (UGA1840001) exhibited a cut mark. The nutria is known to have been introduced to Louisiana from South America in the twentieth century.

The bulk of the faunal material from the Camino site (excluding Stratum D) was placed in the Unidentified Vertebrate category (Table 62). This category ordinarily does not include a bone count, however, in the case of 16JE223, the unidentifiable bone is the most salient feature of the assemblage and the fragments were intact enough to provide a specific count. Of 718 specimens, only 30 represent identifiable elements, or, slightly less than 4.2 percent of the total bone count. The identifiable elements are represented predominantly by teeth or teeth fragments. Only one identification was made based on an element other than teeth, that of one second phalanx of a deer (*Odocoileus virginianus*). Two phalanx fragments were not identifiable beyond the Artiodactyla order.

The Camino faunal assemblage (excluding Stratum D) has a high percentage of burned specimens. Of 718 total specimens, 73.8 percent are burned, most of these to the point of calcification. This aspect may account for the low percentage (4.2 percent) of identifiable elements. Teeth and teeth fragments represent more durable elements of the vertebrate skeleton and are the predominant identifiable element present in the Camino faunal assemblage. Only one specimen from the assemblage (excluding Stratum D) exhibited a modification other

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Table 61. Faunal Material from Transect Shovel Test N75 E190.

	NISP	MNI	Wt, gm
Myocastor coypus Nutria	1	1	5.18
UID Mammal	3		0.88
Total	4	1	6.06

Table 62. Camino (16JE223): Species List (excluding Stratum D).

	NISP	MNI	Wt, gm
UID Mammal	83		28.65
Didelphis virginiana Opossum	1	1	0.11
Procyon lotor Raccoon	1	1	0.33
UID Artiodactyl	2		0.97
Sus scrofa Pig	3	1	1.91
Odocoileus virginianus Deer	23	1	9.50
Bos taurus Cow	2	1	19.43
UID Turtle	1		0.11
UID Fish	1		0.02
UID Vertebrate	601		123.77
Total	718	5	184.80

than burning. This specimen (UGA1840067) was carnivore-gnawed and was placed in the UID Mammal category since it was too poorly preserved to identify further.

Material from Stratum D at 16JE223 (Table 63) was analyzed separately because at the time of excavation, this appeared to be the only provenience at 16JE223 which might provide undisturbed prehistoric aboriginal remains. However, as seen in Chapter 9, historic artifacts were mixed into the *Rangia* midden. This was also the case with the faunal remains, which included a very worn, miscellaneous pig (*Sus scrofa*) molar. Other faunal material from Stratum D consisted of one right upper second molar of an opossum (*Didelphis virginiana*); one miscellaneous canine tooth and one left scapula fragment of a raccoon (*Procyon lotor*); and one miscellaneous sesamoid of a deer (*Odocoileus virginianus*). One right femur fragment with cut marks was identified as turtle (UGA1840012) but was not identifiable beyond class. Seventy-seven percent, or 46 of the 60 total specimens from Stratum D were placed in the Unidentified Vertebrate category; three of these specimens were burned.

Table 63. Camino (1JJE223), Stratum D: Species List.

	NISP	MNI	Wt, gm
UID Mammal	2		0.88
Didelphis virginiana Opossum	1	1	0.12
Procyon lotor Raccoon	2	1	0.65
Sus scrofa Pig	1	1	1.91
Odocoileus virginianus Deer	1	1	0.39
UID Turtle	5		1.55
UID Fish	2		0.35
UID Vertebrate	46		5.01
Total	60	4	10.86

CHAPTER 14
CONCLUSIONS

Introduction

Archeological data recovery conducted at the Camino site is the most extensive and intensive investigation made within the *Isleño* settlement along Bayou des Familles. It was hoped that data from this site would enable us to address some of the issues that have arisen as a result of excavations that have been undertaken at *Isleño* sites since 1988. Unfortunately, the Camino site proved to be multi-component, and with the exception of a tiny shell deposit at Locus B, the three occupations at the site were neither vertically nor horizontally discrete. Thus, our conclusions about historic activities at this site are necessarily limited. This investigation has been extremely useful, however, in that it has provided the opportunity for a closer examination of the existing body of archeological data available for the sites within the *Población*. In the process of establishing a context for the consideration of the 16JE223 assemblage, it has been necessary to characterize the sites that have been subject to NRHP test excavations. This has enabled us to address some of the research issues identified in the research design with greater confidence than would have been the case had we relied solely on data from 16JE223.

This chapter synthesizes our results within the framework of the project research design (Chapter 2). This research design defined three primary research issues for *Isleño* sites: (1) *Isleño* material culture, (2) *Isleño* subsistence, and (3) site structure. In addition, the nature of the prehistoric and early-nineteenth-century components is summarized below. Finally, the impact of the construction of the V-Levee Floodwall and Highway 45 Levee Closures, Louisiana Hurricane Protection Project, on the adjoining Barataria National Register Historic District is discussed. This includes an evaluation of the *Población* sites, including 16JE223, in terms of National Register criteria.

The Aboriginal Component at 16JE223

The aboriginal component at the Camino site consisted of two subsurface *Rangia* shell deposits and a scatter of Native ceramics that was mixed with the historic material throughout Locus A. The larger of the two shell deposits was located within Locus A and was irregularly shaped. A few aboriginal pottery sherds were recovered from within the midden itself (Stratum D), but historic artifacts and faunal material were also found. The smaller shell deposit comprised Locus B. Only Native ceramics were recovered from this area; this appears to be the only culturally discrete deposit on the site. Locus B measured only 4 m square, however, and it yielded only five undecorated sherds and two "sherdlets."

The aboriginal ceramic assemblage from 16JE223 was relatively small and for the most part lacked diagnostics. The few decorated sherds that were present indicated a Mississippi period date. Two radiocarbon dates on shell from Stratum D in Locus A overlapped at cal. AD 1270; this might be an approximation of the site date. Alternately, two prehistoric components were present, since the age spans of the two dates suggest that they may not have been contemporary. In this case, post-depositional mixing may have caused the stratigraphic reversal of the dates.

The aboriginal component at 16JE223 appears to have been contemporary with or slightly earlier than the occupation at the nearby Bayou Des Familles site, 16JE218. In addition to the data supplied by the radiocarbon dates, the ceramic assemblages from the two sites are quite similar. Although it is not possible to make a positive cultural identification of the Native group that occupied 16JE223, they probably were affiliated with Barataria or Bayou Petre phase populations that inhabited the area during the Mississippi period.

It seems likely that at least some of the maize recovered from the Camino site (Chapter 12) derived from the prehistoric component. This would suggest that like the nearby 16JE218, 16JE223 was utilized for specialized, possibly seasonal cultivation of maize. As was the case with the former site, the dominance of maize in the floral collection may not reflect the extent of subsistence diversity at 16JE223.

If historic aboriginal material was present within the Camino assemblage, it could not be positively identified. It is possible that the type Buras Incised might extend into the historic period (Wells 1995), and one sherd of this type was recovered from the *Isleño* site 16JE198. However, Buras Incised is a long-lived type, and the sherds from 16JE223 were too small to permit varietal identification. Consequently, research issues concerning eighteenth-century European and aboriginal relations in this region had to be abandoned.

The mixing of the aboriginal and European material in Locus A undoubtedly was the result of post-depositional disturbance. Nonetheless, the apparent concentration of aboriginal ceramics in the southernmost portion of Locus A may suggest that this was an area of specialized activity. Alternately, more than half of the ceramics from EU N80 E121 were the type Baytown Plain, *var. Cataouatche*, and the relatively large collection from this unit may be the result of the breakage of a single vessel. However, it should be noted that EU N80 E121 yielded more individual types and varieties than any of the other units (Table 39), which may support the suggestion of a specialized activity area. Given the location of these relatively rich deposits in the southernmost portion of the site, it is possible that construction of the V-levee and the associated canal impacted a portion of the prehistoric component at 16JE223.

The Early-Nineteenth-Century Component

The later historic occupation at the Camino site remains the most problematic of the three components. As seen in Chapter 5, no obvious source for the early-nineteenth-century material found at 16JE223 was found in the documentary history of the study area. Yet clearly, a number of ceramic fragments, including sherds of green shell-edged pearlware, annular pearlware, and whiteware, and a few iron objects, post-date the *Isleño* occupation of the site by at least 40 years. Although none of the other material found at 16JE223 was diagnostic for the early-nineteenth century, the presence of the later material means that any and all of the non-diagnostic and eighteenth-century artifacts may have been deposited by these later occupants. Unfortunately, this fact makes it impossible to make reliable statements concerning the *Isleño* component at the site.

Given that much of the activity in the region was not documented to any level of detail, it is not surprising that early-nineteenth-century occupants of the Camino site are unknown. As discussed in Chapter 5, 25 percent of the white male residents of Barataria who did not live on plantations listed hunting as their occupation in the 1850 census. Analysis of the historic artifacts from the site indicates that hunting was likely an important site activity. Since artifacts related to hunting (gunflints, flint debitage, lead shot) are temporally non-diagnostic for the purposes herein in that they could date to either the eighteenth or nineteenth centuries, these may have derived from either the late-eighteenth or early-nineteenth-century components. Thus, 16JE223 may have served as a hunting camp in the early 1800s.

Another possibility is that the site may have been occupied by *cimarrónes* in the early-nineteenth century. As we have seen, runaway slaves are documented as being in Barataria in the vicinity of the *Población* as early as the 1780s (Chapter 6) It might be expected that maroon sites would be materially poor, which would be consistent with the Camino assemblage. Unfortunately, there is no specific artifactual, floral, or faunal evidence in the Camino assemblage to either confirm or disprove this suggestion. With the exception of beads, no items that are often associated with African belief systems (see Yakubik et al. 1994) were

recovered from the site. The beads in and of themselves do not provide any evidence; had they been blue rather than red they might have at least been suggestive of an African or African-American occupation.

Thus, the early-nineteenth-century component at the Camino site remains undetermined. Because it is neither horizontally nor vertically distinguishable from the eighteenth-century component, it remains ill-defined in terms of specific material culture, which further hinders our identification of the occupation. Perhaps most troublesome, however, is that its presence limits our ability to accurately characterize the earlier colonial component at 16JE223.

The *Isleño* Component

The research design for investigations at 16JE223 focused on the *Isleño* component at the site, but as we have seen, our ability to define the nature and extent of this occupation has been limited by the presence of two other components at the site. The presence of a prehistoric aboriginal component at the Camino site precluded identification of historic Native ceramics, if any were present at the site. The early-nineteenth-century component was even more problematic; theoretically, any and all historic material could have been deposited by these unidentified occupants. However, since eighteenth-century material was recovered from the site, and since the site was located in or in the near vicinity of a predicted location of an *Isleño* habitation, the vast majority of the material from 16JE223 was presumed to derive from a Canarian occupation.

As we stated in Chapter 10, all historic material, regardless of date, was utilized in artifact analysis. While this creates a somewhat artificial situation (a small percentage of the artifacts clearly cannot date to the *Isleño* occupation), it precludes fostering a false sense of confidence that all intrusive material has been eliminated from consideration. As a result, the collection from the Camino site alone cannot be utilized to characterize *Isleño* material culture, subsistence, or site organization. Instead, we must also consider the available data from investigations at *Isleño* sites within Jean Lafitte National Park and Preserve. Of these sites, those tested by Yakubik (1989) have received the most extensive investigation. However, even utilizing these data is problematic given the small sizes of the samples.

***Isleño* Material Culture.** A characteristic of all of the *Isleño* sites seems to be a paucity of material goods. This is not surprising given the short-lived nature of the community; the population decreased approximately 70 percent during the first five years of its existence. Four years later, only 40 persons were still living in Barataria. Some sites, such as 16JE198 and 16JE215, appear to have been abandoned early in the history of the settlement. Other sites, such as 16JE214, provide archeological evidence of having been abandoned and subsequently reoccupied (Yakubik 1989:66, 122). Sites that were occupied for longer periods of time appear to have the most extensive artifact collections. For example, the primary occupation at 16JE197, which appears to have been established after 1779 and was not abandoned until 1807 (Yakubik 1989:122), yielded one of the largest collections from the sites that received NRHP test excavations. Subsequent investigations at this site and related outbuildings confirmed this pattern (Thurston Hahn, personal communication to Yakubik, 1995; Swanson 1995).

Examination of the ceramics found at the Camino site and at five of the *Isleño* sites within Jean Lafitte National Park and Preserve (16JE197, 16JE198, 16JE214, 16JE215, and 16JE216) demonstrated that there were certain basic similarities in the collections. All consisted of varying proportions of British and continental European types. None of the ceramics were transfer-printed, which was the most expensive decorative type (Miller 1980, 1991). By contrast, roughly contemporaneous occupations at the Durel Cottage (16OR136; Yakubik and

Dawdy in prep) and at an Orange Grove Plantation slave cabin (16JE141, Yakubik, Dawdy, and Franks in prep) both included transfer-printed pearlwares. While this initially might be seen as a qualitative difference between the assemblages, site chronology may also be a factor. Transfer-printed pearlwares did not become common until the 1790s, by which time most of the *Isleño* sites had been abandoned. The occupations at both 16OR136 and 16JE141 continued, however, which may account for the presence of transfer-printed ceramics in these collections. Nonetheless, the type was absent from both the 16JE197 and 16JE214 assemblages, and both of these sites are known to have been occupied until the first decade of the nineteenth century. Similarly, 16JE223 was reoccupied in the nineteenth century, and no transfer-printed ceramics were recovered at this site. This suggests that at least the later ceramic assemblages in the settlement, including that from the unknown occupation at the Camino site, were of lesser quality than those from contemporaneous urban and plantation sites. While this may have been the result of poor market access along Bayou des Familles, extensive contraband trade of ceramics within Barataria (Maygarden et al. 1995) suggests that economics may have also been a factor.

As seen in Chapter 10, evaluation of ceramic formal and decorative variability is somewhat dependent on sample size because of finite numbers of vessel forms and decorations (Table 33). This is demonstrated by the ratio of vessel form to total vessels (1:12.2) and the ratio of ceramic types to total vessels (1:5.3) calculated for the large sample from 16JE141 (n=207). By contrast, the smaller collection (n=15) from the Durel Cottage yielded results within the range of those from the *Isleño* sites: the ratio of vessel form to total vessels was 1:3.0, and the ratio of ceramic types to total vessels was 1:1.2. Thus, it appears that the *Isleño* collections are no more or less similar to each other in terms of ceramic formal and decorative variability than they are to the similarly sized collection from the urban Durel Cottage. However, it should be noted that both ratios indicate that the 16OR136 collection had a relatively high level of formal and decorative variability as compared to some of the *Isleño* assemblages (Table 33). Insofar as the Camino assemblage is concerned, it is at the low end of the range in terms of both formal and decorative ceramic variability (Table 33), but this may be at least partially attributable to sample size (n=33).

In terms of specific ceramic forms, we have seen that the collections from 16JE198, 16JE214, and 16JE215 are all too small to evaluate the relative frequencies of different functional types in any meaningful way. However, the remainder of the *Isleño* assemblages had very similar relative frequencies of plates, ranging from 23.08 to 26.32 percent of the identifiable vessel forms. These were only slightly lower than the relative frequencies of plates seen in the 16OR136 and 16JE141 collections, which were 26.67 and 27.05 percent, respectively. By contrast, the proportion of bowls in the *Isleño* assemblages was higher than seen in either the Durel or Orange Grove collections. Including the unspecified hollowware sherds, bowls constituted from 34.61 percent (16JE216) to 57.14 percent (16JE223) of the identifiable vessel forms in the *Isleño* collections. Relative frequencies of bowls were much more similar to those seen for plates in both the Durel and Orange Grove assemblages (26.67 percent and 28.99 percent, respectively). The higher proportion of bowls in the *Isleño* assemblages may reflect traditional Canarian foodways. As noted in Chapter 6, the dietary mainstay of the *Isleños* in the Americas was *gofio*, or gruel made with maize. It should also be remembered that maize was recovered during flotation at the Camino site (Chapter 12 and below).

Unfortunately, this may be the only evidence of traditional Canarian culture available from these sites. No artifacts of *Isleño* manufacture were identified in any of the assemblages. Then too, Spanish manufactured ceramics may have been utilized more frequently by *Isleño* than by other contemporary, non-Canarian groups, but the data are ambiguous. No Spanish ceramic were found at 16JE197 or 16JE215, but they constituted 6.9 percent of the total vessels at 16JE216, 8.3 percent of the total vessels at 16JE198 and 16JE214, and 9.1 percent of the total vessels at 16JE223. By comparison, only 0.5 percent of the total vessels from the

Orange Grove collection were of Spanish manufacture, while 13.0 percent of the smaller sample from the Durel Cottage were Spanish. However, the Canarian sites did yield tin-enameled Spanish colonial types that are very rarely seen in southeastern Louisiana, including Marine Ware (16JE223) and Puebla Blue on White majolica (Spanish Colonial Site 13; Fuller 1991). Given that the Spanish generally did a poor job of supplying its colonies, the relative lack of Spanish ceramics regardless of the ethnicity of the site's inhabitants is unremarkable. However, if Yakubik's (1990:205) suggestions that French colonists in Louisiana utilized their material culture as a symbolical expression of their resistance to Spanish administration, we might expect usage of Spanish types to be somewhat more frequent on the Canarian sites, whose inhabitants had no political reason for rejecting Spanish goods in favor of those from France.

In terms of functional variation of the site assemblages, the *Isleño* collections appear to be somewhat more similar to each other than to those from 16OR136 and 16JE141 with regard to the Housing subcategory. Table 36 illustrates that the *Isleño* collections fall into three groups: those in which approximately two-thirds of the collection is in the Housing subcategory (16JE214), those in which approximately one-half of the collection is in the Housing subcategory (16JE197 and 16JE216), and those in which approximately one-third of the collection is in the Housing subcategory (16JE223, 16JE215, and 16JE198). These differences can largely be attributed to the context in which most of the artifacts from each site were recovered. The two excavation units at 16JE214 were placed directly on a structural feature, while those at 16JE197 and 16JE216 were placed within adjacent secondary midden, which might be expected to have somewhat less architectural debris than a unit which uncovered architectural remains. Excavations at 16JE215, 16JE198, and 16JE223, however, were placed in areas that indicated random dispersal within the occupation area. Midden and/or structural remains were not identified at any of these sites, so the relative paucity of architectural remains is not surprising.

The proportion of Housing subcategory artifacts seen in the 16JE141 collection is within the range of those from the *Isleño* sites (64.45 percent); this assemblage derives from both structural remains and adjacent secondary midden. The Housing subcategory is somewhat higher for 16OR136 (84.46 percent); as we have seen, this is probably the result of the abrupt destruction of the building located on this site in the 1788 New Orleans fire. While neither of these proportions are especially dissimilar to the range represented by the *Isleño* sites, both the 16OR136 and 16JE141 collections included ceramic, glass, metal, and stone housing materials, while the collections from the *Isleño* sites consisted exclusively of nails. Then too, none of the *Isleño* sites yielded artifacts indicative of furnishings, while both 16OR136 and 16JE141 contained such materials. Thus, it appears that housing was more substantial in urban and plantation contexts that was the case in the *Población*. This was undoubtedly the result of economic factors, although relatively poor market access to items such as window glass and furnishings may have also contributed to the difference.

Similarly, the Leisure subcategory was better represented in the 16JE141 and 16OR136 collections than was the case at the *Isleño* sites, and a wider variety of Leisure items were collected at the former two sites. However, the Production category was substantially underrepresented at the 16JE141 and 16OR136 as compared to 16JE223, 16JE197, 16JE214, and 16JE216 (Tables 36 and 37). Both of these differences likely reflect the harsh nature of lifeways in the Barataria environment: most activities were directed toward food procurement; there was little time for leisure activities, and there was probably little or no money for the acquisition of leisure subcategory items.

To summarize, it appears that the *Isleño* collections exhibit a number of characteristics which may be indicative of the impoverished living conditions of the settlers. There is some slight suggestion that the quality of the ceramics utilized in the settlement may not have been

as high as was the case on contemporary urban and plantation sites. Similarly, housing appears to have been less substantial, and no evidence was found of furnishings. Leisure artifacts were relatively few and limited, and items related to production (specifically hunting-related artifacts) formed a substantial proportion of four of the six assemblages. Although it does not appear that the *Isleño* ceramic collections showed more formal or decorative variability than did those from 16JE141 and 16OR136, the use of bowls seems to have been more important in the *Isleño* assemblages. This may reflect traditional Canarian foodways, which used a grain gruel as a primary staple. However, there was no evidence of any Canarian manufactured items in any of the collections, and the data on the extent of the utilization of Spanish ceramics is ambiguous.

***Isleño* Subsistence.** Despite rigorous sampling, relatively little faunal or floral material was recovered from the Camino site, which hinders our ability to address questions concerning *Isleño* subsistence. Then too, the fact that the little material which was recovered may have been deposited by any of the three site components further complicates the issue. As we have seen, historic and prehistoric material was mixed even within the *Rangia* midden Stratum D. Finally, analysis of floral and faunal remains from other *Isleño* sites has not been conducted. Thus, there are no data available for comparison.

Less than 5 percent of the faunal material from the site was identifiable. Identifiable fragments included opossum, raccoon, pig, deer, and cow. The occurrence of pig in both the general faunal collection from the site and the collection from Stratum D was particularly interesting, since the *Isleños* are known to have been supplied "a pig of two months" at the time they arrived in the settlement (Houck 1909:155).

Interestingly, the majority of shot recovered from the site was intended for smaller sized game than that represented at the site. This may be the result of preservation; bone from smaller mammals and birds likely would have been more fragmentary than those from medium to large-sized mammals. In addition, the high proportion of small shot may reflect loss. Buckshot, if spilled on the ground, is more easily seen and retrieved than birdshot.

Nearly three-quarters of the bone from the site was burned, suggesting that roasting was the most common means of preparing meat. The presence of teeth and teeth fragments in the collection may suggest that all parts of the animal were utilized. However, it should be noted that if the site did function as a hunting camp, as has been suggested, the relative paucity of bone on the site strongly suggests that game was cleaned and dressed elsewhere.

The most striking result of the archeobotanical analysis was the presence of maize at 16JE223. This included a type similar to prehistoric Southeastern maize, and a second, morphologically different type. While it is acknowledged that this second type may not in fact be maize, this seems an unlikely possibility (Chapter 12). Instead, it probably represents a maize type utilized by either the *Isleños* or by the unknown, nineteenth-century site occupants. Given that the *Isleños* were provided with maize by the Spanish colonial government, and that *gofio*, a maize gruel, was an important component of the Canarian diet in the New World, the former possibility appears to be more likely.

Mention should be made of the relative abundance of fungi in the 16JE223 collection. This is particularly striking because high counts of fungal matter were not seen in the collection from nearby 16JE218. No data are available on the actual use of fungi (such as mushrooms) in Canarian cuisine. It seems more likely that the fungi at the site were not present because of deliberate human use. Four plausible explanations for its presence at the Camino site are suggested:

1. The environment changed sufficiently between the prehistoric occupation of 16JE218 and the historic occupation at 16JE223 to produce a greater presence of fungi. This change might include increased wetness.

2. Crops grown by *Isleño* inhabitants of 16JE223 were more susceptible to fungal infestation than those found at 16JE218. Although maize is a relatively "healthy" crop, fungi mutate frequently, and we have no knowledge of the susceptibility of historical varieties of maize to fungal disease. Prior to the advent of chemical fungicides, European and tropical countries frequently lost between 30 and 50 percent of their total crop yields annually to the effects of microbial diseases, of which fungal diseases are the most prevalent. Maize is susceptible to necrotrophic fungi; as recently as 1970-71, the US corn crop was devastated by necrotrophic fungi resulting from particularly wet conditions (Cooke 1977:24, 26, 34-35). The wetness and heat of the 16JE223 environment certainly would have encouraged fungal growth.

3. Improperly stored grains are highly susceptible to fungal growth. If grain, particularly, corn, is stored without having been properly dried, fungal growth is almost inevitable. Any increase in moisture of the stored grain accelerates fungal growth, furthering moisture increase and heating, and the consequent loss of large quantities of stored cereals (Christensen 1951:134-136; Cooke 1977:22-23).

   The *Isleños* were dependent on corn and rice provided by the government. Documentation presented in Chapter 6 indicates that it was at least an occasional practice to store unhusked corn in barrels, and it was provided to the Canarians in this form. Leaving the husks on was a Native American practice that reduces insect damage. However, Native groups probably used baskets or pots as storage containers, or no containers at all (Weatherwax 1954:79-80). Putting improperly dried, unhusked corn in wooden barrels would have provided an excellent environment for fungal growth.

4. Under the right conditions, namely exposure to moisture and warmth, green timber rots from fungal activity faster than does timber that has been properly seasoned before use in construction (Christensen 1951:142). If the Canarian homesteads, outbuildings, and fences were shoddily and quickly built out of unseasoned timber, and if they were located in proximity to refuse piles of green branches and logs, fungal growth probably would have been intensified.

While all of the above possibilities are speculative, the latter two seem to be the most likely.

Thus relatively little information was obtained on *Isleño* subsistence from the 16JE223 assemblage. This was the result of both small sample sizes and, more importantly, lack of contextual control. Ideally, zooarcheological and archeobotanical analyses will be undertaken at a single component *Isleño* site at some time in the future and will provide more reliable data concerning this issue.

Site Structure. As we have seen, the Camino site yielded little data applicable to the issue of site structure. Only one possible historic feature was recovered. But even the derivation of this small pit is questionable; it was located within a unit that contained extensive root disturbance. The eclectic collection from the apparent pit feature (a glass fragment, a nail, a piece of lead shot, and two undecorated aboriginal sherds) provided little information on its possible function.

It should be noted that we believe that the apparent virtual absence of cultural features on the site was real and not the result of sampling error. Magnetometer survey resulted in the discovery of a total of six features[1], four of which were natural in origin. Since all of the magnetometer anomalies within Locus A were tested with a 1 x 1 m unit, and since all artifact concentrations seen in shovel tests had units placed adjacent to them, we are confident that the few features formerly present on the site were in fact recovered.

Historic artifacts revealed no patterning of distribution across the site. This included not only the distribution of functional types, but that of earlier and later artifacts. Diachronic patterning of artifacts may in fact be present, but only a few items can be confidently attributed to the early-nineteenth-century component. Other items deriving from this later occupation undoubtedly are present, but they are either chronologically nondiagnostic or indistinguishable from those deposited by the late-eighteenth-century inhabitants, since the later site inhabitants may have utilized relic types.

As a result, the Camino site yielded no information concerning the issue of movement of the *Isleño* colonists within the settlement. The site was obviously re-occupied, but at a date after the last of the *Isleños* had left the settlement. While it is possible that a few of the settlers remained in Barataria, there is no documentation for this.

A comparison of the ceramic assemblages and mean ceramic dates (MCD) from the Camino site and those sites tested by Yakubik (1989) provides some information on the period of the *Isleño* occupation at 16JE223, but as was the case with other analyses, the "noise" created by the early-nineteenth-century component necessarily makes any conclusions tentative. The abundance of coarseware suggests that the site was first occupied during the initial settlement of the community in 1779, but the end date is more problematic. The fact that the MCD for 16JE223 (with coarse earthenwares) is earlier than those for 16JE197 and 16JE214 despite the presence of early-nineteenth-century material in the Camino collection, appears to suggest that the *Isleño* occupation terminated sometime prior to 1800. It may have been occupied at least as late as 1788, when 40 individuals were enumerated as living Barataria. However, given that those ceramics deposited by the early-nineteenth-century component cannot be separated from those deposited by the Canarians, this cannot be stated with certainty.

In addition to the virtual absence of archeological features, the Camino site lacked the surface features typical of *Isleño* sites. All of the sites which have been examined within Jean Lafitte National Park and Preserve that have not been subject to disturbance have low mounds which presumably were utilized for house construction (Yakubik 1989; Thurston Hahn, personal communication to Yakubik, 1995; Swanson 1995). Depressions interpreted as borrow pits for *bousillage* manufacture are somewhat less ubiquitous, but are also present on many of the sites. A very slight depression was noted at 16JE223, but it was small in comparison to examples noted at other sites, and it is uncertain whether it was cultural in origin.

It is possible that a house mound was in fact associated with 16JE223 and was formerly located to the south of the present site, in the area of the V-levee and associated canal. As noted in Chapter 7, Colonial Site 17, which was located across the V-levee directly opposite 16JE223, consisted of a low mound extending under the V-levee and a small number of associated artifacts. Thurston Hahn (personal communication to Yakubik, 1995) believes that the actual house site for Colonial Site 17 was destroyed by construction of the V-levee. If this was in fact the case, then it would seem that 16JE223 was a separate activity area of what was once a larger site. It was evidently a spatially distinct locus from the remainder of the site,

[1] This includes the shell midden

since historic artifact density decreased in the southernmost portion of 16JE223, and it appears that the canal impacted little of the historic deposits in this area.

Artifact functional analyses as well as artifact density comparisons strongly suggest that hunting was a very important, if not the most important activity at 16JE223. Although it has been referred to repeatedly herein as a "hunting camp," it is unlikely that the site represents a hunting camp in the sense understood today. Rather, it may have been a focal area for activities related to hunting, including arms storage, maintenance, and ammunition manufacture.

In addition to the large proportion of armaments in the Camino assemblage, the relative infrequency of Housing subcategory artifacts, as well as the comparative paucity of ceramic tableware forms support the contention that this was not a domestic occupation. While it is acknowledged that the proportion of the Housing subcategory in the 16JE223 assemblage was only slightly smaller than those seen at 16JE214 and 16JE198 and that in all three cases this was the result of artifact recovery in areas of random dispersal, investigations at Camino were much more extensive than those at the other two sites. Despite concerted effort to locate cultural features, none related to former standing structures were identified. Then too, no midden areas were found. Thus, the evidence suggests that neither were present at the Camino site, and that the occupation at 16JE223 was not domestic in nature.

However, it should be noted that Camino is not the only site within the *Población* that provided evidence of distinctive site activities. The 16JE216 assemblage was notable in several respects: it also had a high proportion of armaments, it had an extremely large number of aboriginal sherds, and it had an exceptionally high artifact density. Unlike 16JE223, the aboriginal material appears to be contemporary with the site's *Isleño* component. The fact that a village of Ouacha Indians was located near the confluence of Bayous des Familles and Barataria strongly suggests that, at minimum, the inhabitants of this site were trading extensively with Native groups, or, more likely, a Canarian living at the site had taken a Native wife. The high proportion of arms and relatively high artifact density may suggest that more than one family resided in this locale, or alternately, a storehouse was located here. Unfortunately, these suggestions must remain tentative until additional investigations are conducted at this site.

Thus, while the evidence is limited at the present time, there appears to be suggestions that not all of the sites within the *Población* were domestic in nature. Archeological investigations supervised by Thurston Hahn (personal communication to Yakubik, 1995; Swanson 1995) have shown that discreet activity areas are present at least at 16JE197, but this site was evidently occupied longer than any other in the *Población*. However, 16JE223 appears to be a distinct activity locus that may or may not have been associated with a habitation area and, when compared to the unique collection from 16JE216, suggests specialized use at this site. Clearly, more research on single component *Isleño* sites is necessary to more fully address this issue.

The Impact of Construction on the Barataria National Register Historic District

The above has demonstrated that despite considerable problems caused by the multiple components, the Camino site yielded information important to our understanding of history. Thus, the decision that the site was eligible for nomination to the National Register of Historic Places under criterion d was obviously correct. At issue, however, is whether the site was also eligible under criterion a. Criterion a states

> Properties may be eligible for the National Register if they are associated with events that have made a significant contribution to the broad patterns of our history [National Park Service 1982:17].

The Guidelines for Applying National Register Criteria for Evaluation note that

> ...the particular property should be a *good representative* of the theme and of the specific event or events. To be a good representative, it must have *strong associations* with the event or events and it must possess integrity [National Park Service 1982:17; emphasis added].

Under the above definition, the Camino site was clearly not a good representative of an event. While the site possessed the quality of integrity in that it had not been disturbed since it was occupied, it lacked strong associations with the Barataria Canary Islander settlement by virtue of the "noise" produced by the prehistoric and the early-nineteenth-century occupations. A consistent theme throughout this report has been our inability to state with certainty which items in the site assemblage derived specifically from the *Isleño* occupation, since any of the eighteenth-century material from the site may have been deposited by the later site inhabitants. In addition, previous investigations at other Canarian sites have demonstrated that single component *Isleño* sites are in fact available (Yakubik 1989).

Then too, while the Canarian immigration to the New World in general and to Louisiana in particular obviously was an event which "made a significant contribution to the broad patterns of our history," it is arguable whether any of the sites within the *Población* or the community as a whole are "good representatives" of this theme. As seen in Chapter 6, the Canarian migration to Louisiana was only one of many efforts made by the Spanish to settle *Isleños* in their American colonies. Within Louisiana, the *Población* was only one of four Canarian settlements, and it was the first of these four to fail. Certainly the successful settlement of San Bernardo on Terre aux Boufs, which still has large numbers of individuals of *Isleño* descent residing in the vicinity, would have stronger associations with the theme of Canarian migration to Louisiana than the miserable failure on Bayou des Familles.

The investigations presented above have clearly exhausted the research potential of 16JE223. Additional excavations may have increased our sample sizes, but it would not have facilitated our ability to separate the components for analytic purposes. This lack of separation between the three site components compromised our ability to address issues identified in the research design with data from the Camino site alone. As a result, we have supplemented it with information derived from investigations at other *Isleño* sites whenever possible.

Similarly, that portion of the ditch/levee/old Barataria Road complex located to the east of the site within the construction corridor has been thoroughly documented. As we have seen, the levee is of recent origin, and on the basis of its age is not eligible for inclusion in the NRHP. The complex of features, including the road, has been profiled and mapped within the construction corridor, and their locations have been tied to a permanent datum. That portion of these features within the construction corridor therefore has been thoroughly documented, and they exhibit no further research potential.

The Barataria National Historic District is located immediately to the south of the construction corridor within the Barataria Unit of Jean Lafitte National Historical Park and Preserve. Present plans include the extension of the district to the north to encompass additional *Isleño* sites and other features located north of the V-levee (Betsy Swanson, personal communication to Yakubik, 1995). Because the association of the *Isleño* component at 16JE223 has been compromised by the other two occupations, and because the research potential of this site has been exhausted by the research presented herein, it is not eligible for inclusion in the expanded National Register district. Similarly, the levee and ditch complex east of the site are not contributing elements of the district, since they are modern. Finally, the Old Barataria Road, which extends north of the construction corridor, would be a contributing

element to the extended district, but that small portion of the road within the construction zone has been thoroughly documented.

The construction also will have no effect on plans to expand the Historic District. At present, the V-levee physically separates the established District from the area of intended district expansion. Thus, construction of the V-levee Floodwall and Highway 45 Levee Closures will not impose an artificial boundary where none already exists. In addition, while

> A district is usually a single geographical area of contiguous historic properties... [it] may also be composed of two or more definable significant areas separated by nonsignificant areas in a limited number of cases. For example, a discontiguous district may be appropriate where... visual continuity is not a factor in significance [National Park Service 1982:6].

Visual continuity is not a factor in the significance of the Barataria Historic District. In fact, visibility is so poor due to dense vegetation (Plate 1) and the subtle nature of the features themselves, that it is usually impossible to see one surface feature from the vantage point of another on a single site. View of one *Isleño* site from another is absolutely impossible under any circumstances (Yakubik, personal experience). Prehistoric sites in the area exhibit similar low visibility; their surface manifestations generally consist of a light scatter of shell. Thus, construction will have no effect on the visual continuity of an expanded district.

Finally, the District as it is presently drawn includes non-contiguous sites located along the levee of Bayou Barataria, along the submerged levee of Bayou Coquilles, and on the shore of Lake Salvador. These sites are separated from the core area of the District by modern features such as pipeline canals and the Bayou Segnette waterway. Thus, there is a precedent in the configuration of the District as it currently exists to permit non-contiguous elements. Construction will therefore not effect efforts to expand the boundaries of the district.

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Hahn, Thurston III
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APPENDIX I:

SCOPE OF SERVICES

January 6, 1995

REVISED* SCOPE OF SERVICES
CONTRACT DACW29-94-D-0020 (ESI)
DELIVERY ORDER # 01

ARCHEOLOGICAL DATA RECOVERY FOR A SPANISH COLONIAL PERIOD HOUSE SITE, JEFFERSON PARISH, LOUISIANA

1. Introduction. Data recovery planned for a reported Spanish Colonial Period house site is to be completed as part of the V-Levee Floodwall and Highway 45 Levee Closures, a feature of the Westwego to Harvey Canal, Louisiana Hurricane Protection Project, Jefferson Parish, Louisiana. The project is designed to provide standard hurricane protection to populated areas of Jefferson Parish on the west bank of the Mississippi River.

The investigations are to be conducted in accordance with a research design to be prepared by the Contractor as part of his final technical proposal and approved by the New Orleans District (NOD), Corps of Engineers. The contract period for this delivery order will be ***29*** weeks.

2. Study Area. The V-Levee Floodwall and Highway 45 Levee Closures reach is confined to a 315 foot wide corridor extending from the toe of the unprotected side of levee to the north, between the V-Levee vertex on the east and Highway 45 on the west.

The study area will include the entire width of the project corridor between levee station 19+00 and 26+00. The reported Spanish Colonial Period house site is located in the project between levee station 20+00 and 23+00 and measures approximately 35 meters east/west by 44 meters north/south. A landscape feature forming the eastern boundary of the site is thought to represent the former Camino Real de Barataria roadbed. The location of the work area is shown on Sheets 7 and 8, File No. H-8-40312, of the project maps and is provided as Attachment 1.

3. Background Information. A construction contract was awarded on December 12, 1994, and construction is scheduled to commence in early 1995. The discovery of the Spanish Colonial Period house site with associated landscape features was made by members of the Louisiana Archaeological Society. A sketch map of the site indicates that it is within the limits of a planned interior drainage canal to be constructed as part of the hurricane

Revisions in bold italics

protection levee. In order to proceed with construction immediately upon completion of all archeological fieldwork, NOD in consultation with the State Historic Preservation Officer considers the site eligible for nomination to and inclusion on the National Register of Historic Places under critera a and d 36 CFR 60.4 (a-d)].

4. Study Requirements. The investigations will be conducted utilizing current professional standards and guidelines for archeological research including, but not limited to:

- Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;
- The Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37);
- The Advisory Council on Historic Preservation's regulation 36 CFR Part 800 entitled, "Protection of Historic Properties";
- The Advisory Council on Historic Preservation's 1980 draft publication and subsequent revisions entitled "Treatment of Archeological Properties".

The work to be performed will be conducted in two phases. All methods and procedures will be in accordance with the approved research design.

a. Phase 1 Fieldwork and Management Summary. In order to ensure that the outer boundaries of the site are confirmed with a high degree of certainty, and to ensure that any smaller sites or features have not gone undetected, the study will include shovel testing at 10 meter intervals between levee station 19+00 and 26+00. The effort will include profile excavation and recordation of the historic roadbed. Identified sites, roadbeds, or associated landscape features will be mapped, recorded and assessed in terms of their significance with relation to similar features reported within the adjacent National Register District.

Generally, the investigations will focus on the Spanish Colonial Period house site. The testing will be conducted to delineate the horizontal and vertical extent of the site, to determine the nature and condition of deposits, and to aid in the placement of additional excavation units at the site as required. Phase 1 will commence with the establishment of a site datum and grid baselines which are tied into established Corps of Engineers survey markers. Additional horizontal and vertical control readings will be obtained at intervals across the surface of the site for the purpose of constructing a map of the site. ***The map***

will include site contours mapped at 10 (cm) centimeter intervals. Each control point will be staked or flagged to further facilitate horizontal and vertical control of data.

Following the grid layout, a combination of shovel testing and the use of metal detector, magnetometer, or other remote sensing apparatus will be employed at an appropriate interval, across the entire surface of the site. ***Shovel tests will measure at least 30 cm in diameter and will be excavated to sterile subsoil.***

A minimum of ***ten*** one meter square units will be excavated at the site once its limits have been defined. Unit excavations will be conducted using standard archeological excavation and recordation procedures and in accordance with the research design. As a minimum, each unit will be excavated in five centimeter or natural levels to culturally sterile deposits. Material from each excavation unit will be screened through 1/4 inch (.25 cm) screen. Soil will be described and all artifacts will be described, recorded and bagged according to provenience for laboratory analyses. Plan view map drawings will be made at the top of each level. A final floor plan and a minimum of two profiles will be mapped, photographed and recorded to demonstrate the stratigraphy for each unit. All profiles and features excavated will be mapped and photographed. Recovery of additional special samples will follow standard acceptable procedures provided for obtaining such samples.

The fieldwork will be completed within three weeks of delivery order award. A management summary will be submitted to NOD within five days of completion of the fieldwork. The report will summarize the completed work effort and make interpretations and recommendations for further treatment of the site. If evidence of features or intact deposits are lacking and if it is determined that the site lacks integrity and research potential, it will be so stated in the Management Summary. If the site exhibits integrity and further research potential, the Contractor will provide recommendations for further work.

The completed Louisiana State Site Form and the site map will be included with the management summary. The site map will include detailed locational information and the appropriate scale and legend. In addition, any tables illustrating the results of preliminary analyses of data which supports the Contractor's interpretations or recommendations for subsequent phases of investigation will be submitted with the management summary for review and approval by NOD.

b. Phase 2: Data Analyses and Report Preparation. All data collected in conjunction with this investigation will be analyzed using currently acceptable scientific methods and will be conducted

in accordance with the research design. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc. obtained during the course of the investigations, utilizing the format currently employed by the Louisiana State Archeologist. The catalog system will include site and provenience designations. The results of these analyses will be reported in full, in the written reports. ***For the purposes of this delivery order, it is assumed that the number and kinds of artifacts anticipated will be similar to that which were recovered from six similar sites tested within the boundaries of the adjacent National Register District.***

All field and laboratory data will be integrated to produce graphically illustrated, scientifically acceptable draft and final reports discussing the project as a whole. Further requirements for reports are provided in Section 6.b, below.

5. Unmarked Burials or Human Remains. Unmarked burials or other human remains are not anticipated to be encountered as a result of the investigations. In the event that evidence of an unmarked burial, human skeletal remains, or associated burial artifacts are encountered during the fieldwork, the provisions of the Louisiana Unmarked Human Burial Sites Preservation Act [Louisiana R.S. 8:671 through 681 and R.S. 36:209(I) and 802.13] shall apply. Activity that may disturb the remains shall cease and the Contractor will immediately notify NOD.

6. Reports.

a. Management Summary. Four copies of a management summary will be prepared and submitted to the COR at the completion of the Phase 1 work effort. The management summary will serve as a decision document to determine if additional archeological investigations of the site are warranted. The minimum requirements for topics to be included in the management summary are provided in Section 4.a, above.

b. Draft and Final Reports. The draft and final reports shall include all data and documentation in accordance with the Secretary of Interior's Standards and Guidelines (Section 4 above).

Five copies of a draft report, integrating all phases of this investigation will be submitted to the COR for review and comment ***16*** weeks after the date of the order. The final report shall follow the format set forth in MIL-STD-847A with the following exceptions: (1) separate, soft, durable, wrap-around covers will be used instead of self covers; (2) page size shall be 8-1/2 x 11 inches with 1-inch margins; (3) the reference format of American Antiquity will be used. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual dated January 1973.

The COR will provide all review comments to the Contractor within 6 weeks after receipt of the draft reports. Upon receipt of the review comments on the draft report, the Contractor shall incorporate or resolve all comments and submit one preliminary copy of the final report to the COR within 3 weeks. Upon approval of the preliminary final report by the Contracting Officer's Representative, the Contractor will submit one reproducible master copy, one copy on floppy diskette, 35 copies of the final report, and all separate appendices to the COR within *29* weeks after date of order. A copy of the Research Design and the Scope of Services shall be bound as an appendix with the Final Report. The report cover will conform to the New Orleans District Cultural Resource Report Series standards and specifications.

Phase one excavations may identify features or other data recovery requirements which necessitate additional excavations beyond this delivery order. The necessity for supplemental investigations will be based upon the management summary prepared as part of Phase one. The supplemental investigations at the site, if necessary, will provide for the recovery of data on all significant research topics identified in the research design which are not completely addressed during Phase one. Supplemental data recovery excavations are not included in this delivery order.

7. Involvement of LAS members.

The Contractor will make all reasonable effort to involve members of the Louisiana Archaeological Society in the fieldwork, or laboratory analyses phases of the project. This effort may include, but is not limited to, alternative work schedules to encourage participation, transportation to or from the site, or other opportunities for assistance.

8. Attachments. Previously furnished.

Attachment 1. File H-8-40312 Sheets 7-8 of 45.

APPENDIX II:

LIST OF PROVENIENCES AT 16JE223

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Lot #	FS#	Provenience
1	1	N87 E129 A1
2	2	N84.5 E117.5 L1
3	3	N84.5 E117.5 A2
4	4	N87 E129 A2
5	5	N84.5 E117.5 B1
6	6	N87 E129 B1
7	7	N84.5 E117.5 B2
8	8	N87 E129 B2
9		N84.5 E117.5 B3
11		N84.5 E117.5
12	9	N92 E120.5 A1
13		N84.5 E117.5 C1
14	10	N84.5 E131 A1
15		N84.5 E117.5 C2
16	11	N84.5 E131 A2
17	12	N92 E120.5 B1
18		N94 E124.5 A1
19	14	N84.5 E131 B1
20	15	N92 E120.5 B2
21	16	N94 E124.5 A2
22	17	N94 E124.5 B1
23	18	N92 E120.5 Lvl. D1
24	19	N84.5 E131 B2
25		N85.1 E123 A1
26	20	N92 E120.5 Lvl. D2
27		N92 E120.5 D3
28		N85.1 E123 A7
29	13	N84.5 E131 F1 Lvl B3
30		N92 E120.5 D3
31		N82.5 E125 A1
32	22	N85.1 E123 B1
33	23	N82.5 E123 B2
34	24	N85.1 E123 B2
35	25	N82.5 E125 B2
36		N84.5 E132 A1
37	26	N94 E124.5 B2
38	27	N82.5 E125 F2
39	28	N82.5 E125 C1
40		N94 E124.5 C1
41	29	N84.5 E132 B1

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Lot #	FS#	Provenience
42	30	N94 E124.5 F3
43	31	N94 E124.5 F4
44	32	N84.5 E132 B2
46		N85.1 E123 C1
47	34	N84.5 E132 B3
48	35	N84.5 E132 F1 Lvl B4
49		N99 E127 A1
50		N82.5 E124 A1
51	36	N99 E127 B1
52	37	N82.5 E124 A2
53	38	N82.5 E124 A3
54		N86 E129 A1
55	39	N82.5 E124 B1
56	40	N82.5 E124 B2
57	41	N86 E129 B1
58	42	N82.5 E124 B3
59		N104.5 E126.5 A1
60		N82.5 E124 C1
61		N83.8 E130 A1
62	43	N104.5 E126.5 C1
63	44	N83.8 E130 A2
64		N82.5 E124 C2
65	45	N83.8 E130 B1
66	46	N83.8 E130 B2
67		N82.5 E124 C3
68	47	N82.5 E124 F3
69	48	N83.8 E130 F1 fill LvB3
70		N84.5 E132 C1
71	49	N86 E129 B2
72		N84.5 E131 C1
73		N83.8 E130 C1
74		N86 E129 C1
75		N80 E121 A1
76	50	N80 E121 B1
77	51	N80 E121 B2
78	52	N80 E121 B3
79		N80 E121 C1
80	21	N84.5 E131 F1 LvB4